

In the Lab: Multi-Function Inkjet Printers

HUB

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Volume 21 Number 08

Free

The Computer Paper

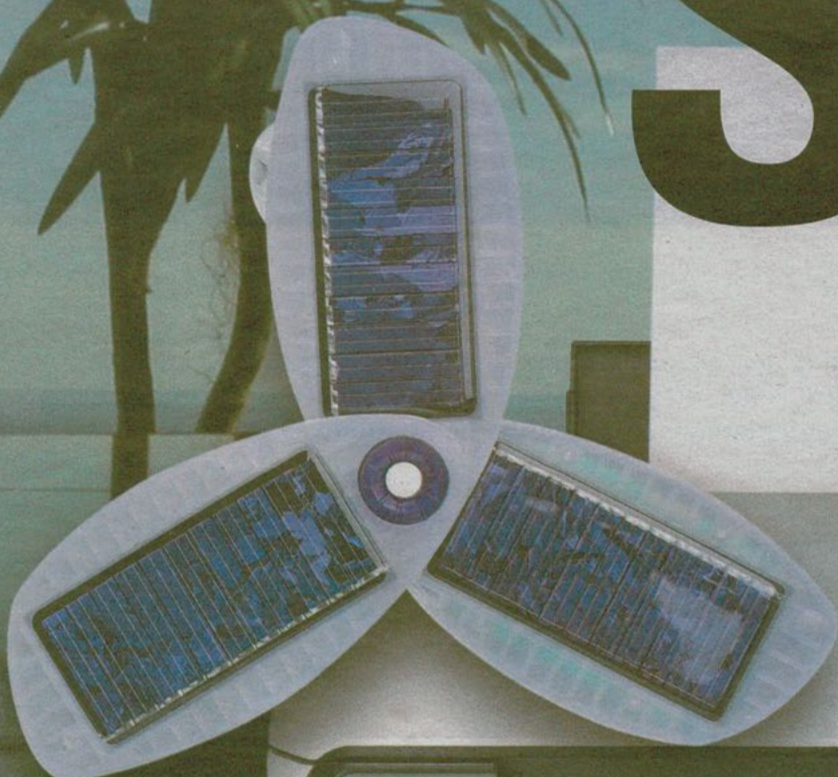
Teleworking Tales

An Office in the Cloud
Online office suites

SOHO Gear
The Well-Appointed
Home Office

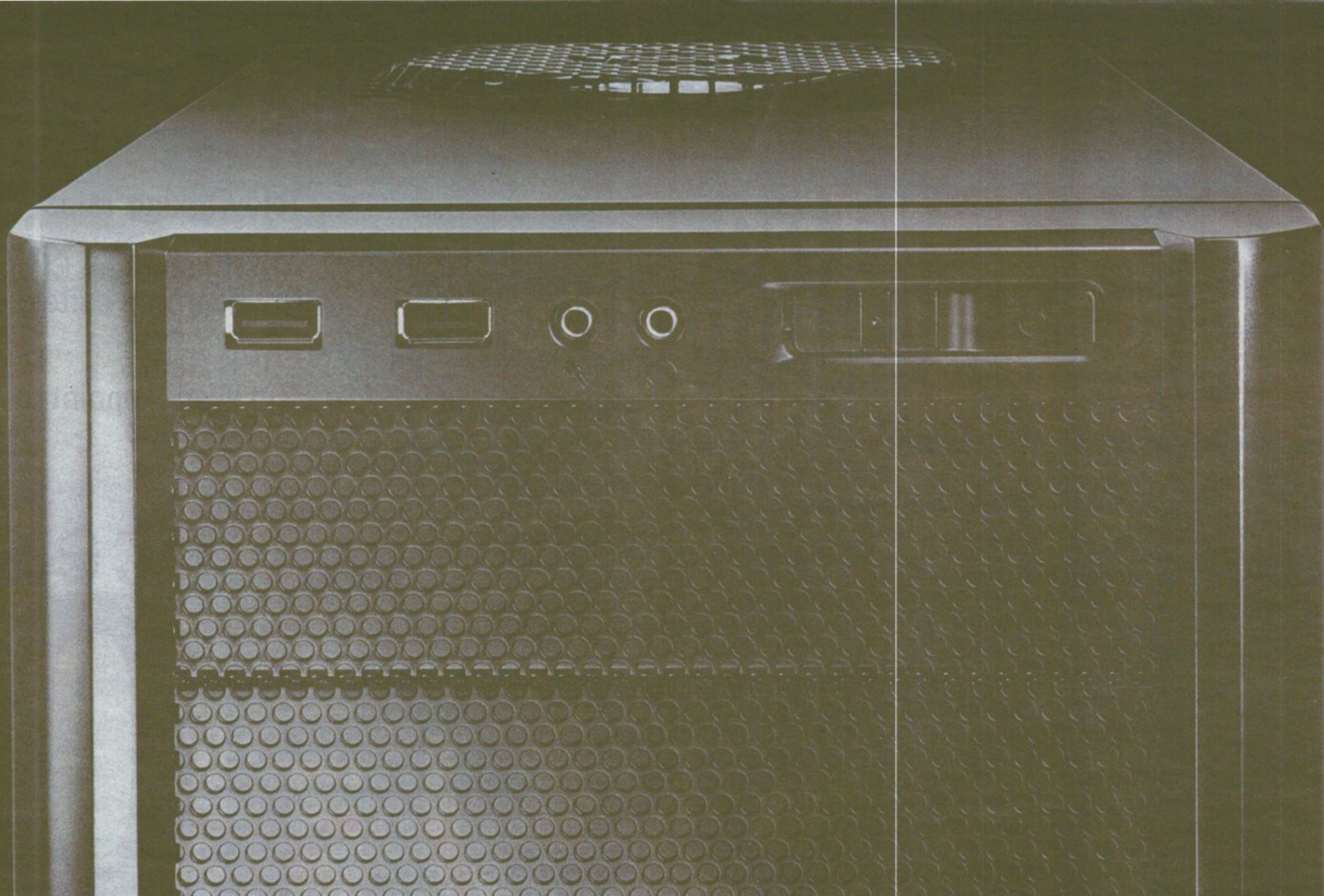
Home sweet office...

SOHO



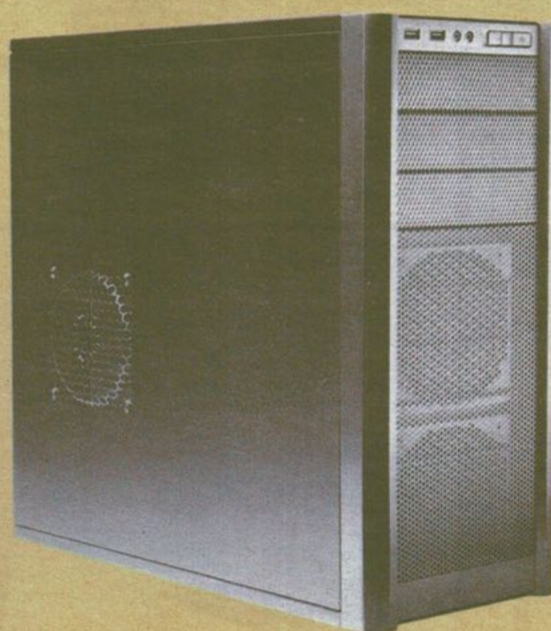
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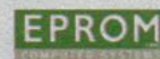
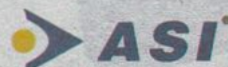
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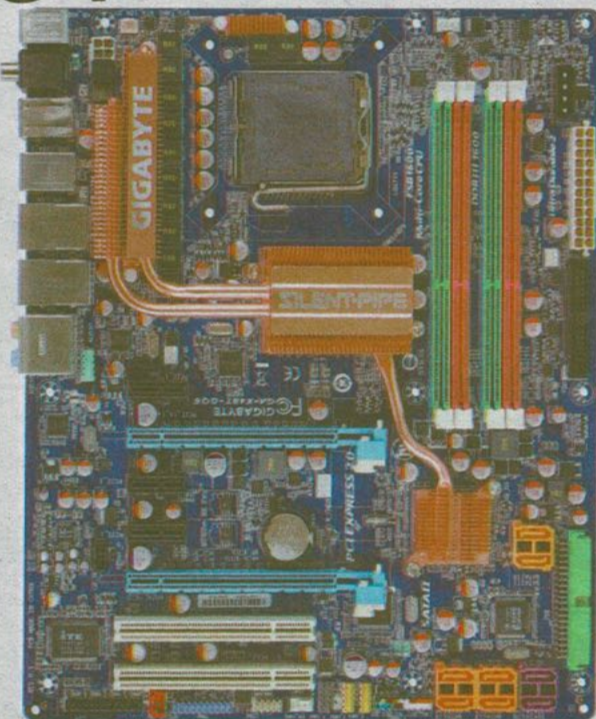


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Congratulations

to **Walter Post of Trenton, ON,**

the winner of the HUB:The Computer Paper Ultimate Game PC contest. The Ultimate Game PC build had the finishing touches applied in our last issue and now, it's time to say goodbye to the beast. We'll miss you. Take good care of her, Walter.

Walter's prize consists of:

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ASUS Striker II Extreme
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CPU

3.16GHz Intel Core 2 Duo Desktop Processor E8500
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RAM

KVR1066D3N7K2/2G
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ASUS EN9800GTX x2
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Logitech G51 Surround Sound Speaker System
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Thermaltake ToughPower 1000-Watt
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www.microsoft.com/hardware/gaming

Mouse

Microsoft SideWinder
\$80
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Stuck in traffic, choking on exhaust fumes. Watching the guy in the next lane eating a bowl of cornflakes from a bowl perched precariously on the steering wheel and the woman behind applying a thick layer of mascara before the work day begins.

Or, opting for the more environmentally sensitive and oft-times quicker way where available, you sit on a crowded train, not listening but not being quite able to tune out the louder-than-need-be conversation between a group that evidently work in the same office and that rides the train together every day. The person beside

you is reading the newspaper, ignoring train etiquette by encroaching on your personal space with the unfurled broadsheet, turning the page before you're finished reading.

Granted, these are the worst case scenarios, the ones that hit on days when you roll out of bed and, instead of smiling at what the day may have in store you think that if intuition counts for anything, it's going to be a bad day.

Sure, it's rhetoric (I'm thinking of pursuing a career in politics) but with this worst case scenario in mind, is it any wonder so many people dream of working from home?

Thanks to the proliferation of broadband Internet access, the advance in online meeting and group collaboration wikis, websites and applications and a mix of personal document centres, smartphones and laptops, being productive between 9 a.m. and 5 p.m. without sitting at a desk in a traditional corporate office is a reality.

Far from the digital ties that bind us to our jobs after hours (as is sometimes suggested) a Towers Perrin survey from earlier this year claims that the overwhelming majority of workers feel that cell phones, laptops and other gadgets and gear are actually freeing them to create a reasonable work / life balance. 86 per cent of respondents to the Towers Perrin Global Workplace Study released in February of this year agreed that personal tech actually helps them to find a balance between the personal and professional aspects of their lives. The study polled almost 90,000 workers in 18 countries worldwide with about 5,000 respondents in Canada.

A study of 270 Canadian CFOs by Robert Half International discovered that, while salary is still considered the biggest draw — followed by benefits and bonus packages — in attracting candidates for accounting positions with 31 and 20 per cent of respondents agreeing respectively (they are money-minded, after all) 20 per cent said that telecommuting and flexible work schedules were the most important. It's heartening to think that the line-of-sight style of management — where looking busy can seem more important than actual output — may be going the way of the Dictaphone and typing pool.

In this issue, which we've dubbed "Home Sweet Office," we'll take a look at the still emerging world of telecommuting with Dorian Nicholson's examination of the trend toward empowering employees by allowing them to work where they're most comfortable: at home.

We also look at MFPs In the Lab; these sub-\$200 inkjets act as an all-in-one documents centre for the home office, allowing you to print, scan, copy and in some cases fax.

Also, Andrew Carruthers discusses some of the leading options in online office suites. These often free services take your documents and in some cases spreadsheets, presentations, notes, appointments and more and put them in the data cloud, accessible from anywhere you can find an Internet connection be it at home, down the street or on the other side of the world. The cloud computing concept is a major factor in allowing us to untether ourselves from our desks. Anything that loosens the ties that bind can only really be a good thing, in my mind. Granted there are some serious security and privacy concerns to be discussed and dealt with, but for non-sensitive data, cloud computing is a boon for the mobile worker or editor with terminal wanderlust (no names).

With all this in mind, it begs the question why I'm sitting here in the office on a sunny Friday afternoon as I write this...

**We hope you enjoy the issue,
Andrew Moore-Crispin
Editor-in-Chief**



The Doctor is in

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What is DivX?
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How do I check for spyware?
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Sweet, Sweet SOHO Stuff

The well-equipped home office

If your home is your castle then the home office is the treasury, the library and the communications centre.

Whether a student, telecommuter, independent home business owner or just someone taking care of the day-to-day administration of life, a well-equipped home office goes a long way to boosting productivity, helping us to stay organized and on top of things.

There are a few central components to building the best SOHO (small office, home office) setup. Following are some of the important product categories and a few product recommendations to go with.

The throne

You could easily go out and spend \$500 or more on a top-of-the-line office chair from the likes of Steelcase or Humanscale and your butt would be cradled in the ultimate comfort, your lumbar region supported and your chair infinitely adjustable. For many people however, that price tag is way too heavy to justify. As Gord Goble pointed out in his March 2008 "Essential Home Office Furniture" article ([www.hubcanada.com/index.php/ggoble/chair](http://www.hubcanada.com/index.php/ggoble/chair;)), there are many excellent options at the \$300 and below level, like Ikea's Joakim. The important thing is to get as much butt time with the chair as is humanly possible before committing to purchase. While you may feel a little weird sitting on the demo chairs at your local outlet for an hour, it's worth doing; you'll be spending a lot more time in it than that when you get it home so it's important you find the right fit for you and your posterior.

The brains

Choosing the right computer for your home office can be a daunting task. Once the initial, relatively simple questions are dealt with (Mac or PC, desktop or laptop and the ever important "What's my budget?") the real fun begins. To a large degree, your choices will be narrowed down by your budget. As a general rule of thumb though, in the days of Windows Vista pre-installed on the overwhelming majority of PCs you'll see at retail, opt for more RAM (2GB as a default minimum) and a Core 2 Duo processor.

The network

You have to have some kind of network in the house and if we're acquiring new technology, we might as well get the latest. To that end, consider the Linksys Wireless-N Gigabit Router with Storage Link (WRT600N, \$190, www.linksys.com) offering 802.11n wireless for up to 12x the speed and 4x the range of earlier wireless standards. It, like many newer routers, has enhanced security protocols to replace the older and more easily cracked standards. The Wireless-N Gigabit Router with Storage Link, as the name implies, can also share a USB storage device over the network; a USB flash drive, USB hard drive or similar.

The storage

While the amount of storage space on a desktop or laptop PC nowadays would have been unheard of a few short years ago, it's apparent that you can never have too much. That's where off-board storage solutions come in; they are the easiest way to share files between

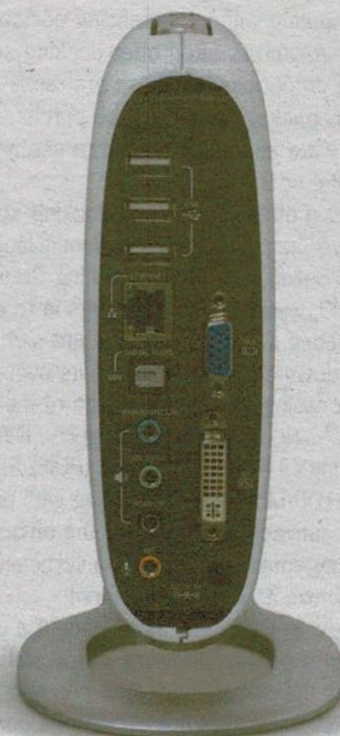
computers on a network, they're ideal for creating regular data backups and, if you choose wisely, they can perform a whole host of other tricks too. The 1TB Maxtor Shared Storage II

(www.maxtor.com, \$399) is a good example. Not only does it afford up to 1TB of storage space or 500GB of automatically backed up storage using RAID mirroring, it can also act as a media server.

Pictures, documents, home movies and the like are automatically funneled into their appropriate folders to make things even easier.

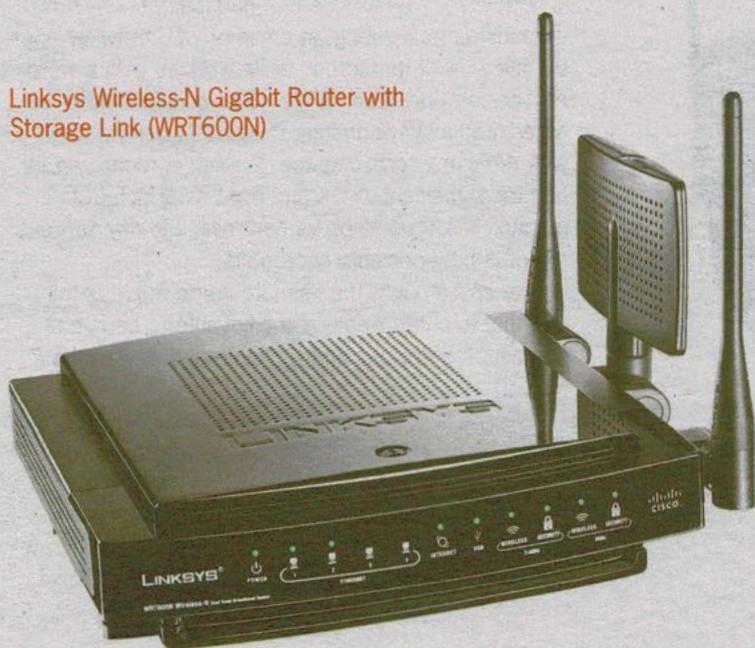
The dock

More and more people are opting for a single, well-featured laptop computer over a desktop. While there are sacrifices to be made when choosing a portable as opposed to stationary PC, the benefits of mobility — around the house and beyond — often make the price premium worthwhile. That said, a laptop solution doesn't have to come at



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Linksys Wireless-N Gigabit Router with Storage Link (WRT600N)



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a cost to a dedicated office space with all the accoutrements like a large LCD flat panel monitor, more USB ports, a full-sized keyboard with number pad and an optical mouse for when the trackpad or navigation nipple thingy just isn't cutting it.

With a laptop dock you can create the home office setup you want to get all the benefits of desktop computing without sacrificing portability. Laptop manufacturers often offer docking solutions for their own notebooks but these are rarely included in the retail package and must be purchased separately. They are also often limited to use with a specific model or line or laptop.

Belkin offers a universal docking solution which may prove the perfect choice in multi-laptop households. The Belkin High-Speed Docking Station (F5U265, \$180, www.belkin.com) plugs in to any notebook, provided it has an ExpressCard slot and is running Windows XP or Vista. It has its own graphics processing unit to take some of the load off the notebook, offers five USB ports, DVI and VGA outs, analog (3.5mm) and digital (PDIF) 5.1 audio out, 10/100 Mbps Ethernet along with practical touches like convection cooling for the on-board GPU, a cable management system and a vertical form factor to minimize its desktop footprint.

You can easily get away without a dock and still have a more permanent home office station. This will take away the convenience of a one-plug connection however. Most (if not all) laptops come with at least a VGA port to connect to a projector or monitor and have a couple of USB ports that can be used to plug in peripherals. Docks are useful when you need more ports and a one-plug connection to make your laptop perform more like a desktop.

The peripherals

Whether it's a desktop or a laptop (with or without a docking station), the key elements of a home office solution for your laptop are a printer, monitor, keyboard and mouse. Each is, of course, entirely optional. However, laptops aren't the most ergonomic devices and so a movable monitor, keyboard and

mouse go a long way towards making extended computing sessions more comfortable and productive.

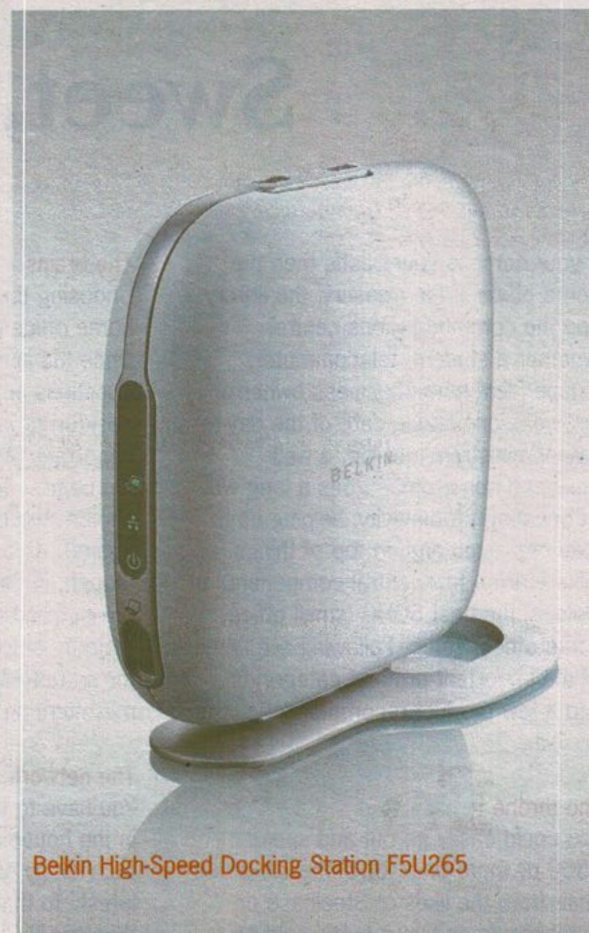
Mouse - We like Microsoft Hardware's mice as a rule. Witness the Microsoft Wireless Laser Mouse 8000 (\$90, www.microsoft.com/hardware), a Bluetooth wireless mouse with a slick brushed aluminium shell, five customizable buttons, an attractive charging dock, laser precision and intuitive four-way scrolling. At \$90, it's likely overkill but it offers a high-quality feel and exacting precision. The Microsoft Wireless Laser Mouse 5000 incorporates many of the same benefits but loses the Bluetooth connectivity (though it's still wireless), brushed aluminium finish and a select few other features to bring the price to a more reasonable \$50.

Keyboard - Options abound, from an inexpensive but functional USB board to a luxury ergonomic keyboard with raked keys and zero-degree tilt to make computing more comfortable. Again, our preference goes to Microsoft Hardware's quality keyboards, available with an array of features from simple to superlative. The Microsoft Natural Ergonomic Keyboard 4000 (\$60, www.microsoft.com/hardware) puts fingers in a more natural position without forcing users to overcome a steep learning curve that can present itself with fully split keyboards. Just about any keyboard will be more finger friendly than your standard laptop keyboard though.

Printer - While we're all trying to print as little as possible, both to save toner and paper and do a little bit to save the earth, we're still nowhere near the foretold paperless office.

Opt for a multi-function printer (MFP) that can print, scan and (in a pinch) copy. Fax capability is a matter of personal preference and need. While we here at HUB: The Computer Paper wait with bated breath, fax still hasn't faded in to obscurity as it (arguably) should.

Both monochrome laser and colour ink jet MFPs can be had for under \$200 for a unit of at least reasonable quality. If cost per page is of primary



Belkin High-Speed Docking Station F5U265

concern, look to a monochrome laser MFP like Samsung's All-In-1 Multifunction Laser Printer (SCX-4500, \$190, www.samsung.ca) or Kodak's newest MFP, the ESP5 with its bargain priced ink and quality output (\$170, www.kodak.ca). You can find MFPs with wireless networking, integrated cordless landline phone handsets attached, integrated fax preview on a wide colour LCD screen (the excellent Brother MFC 885CW, \$260, www.brother.ca) and all manner of others. Check out the In the Lab article in this issue for a thorough run down.

Monitor - While it may be overkill for some home office setups, that doesn't mean it's not desirable; this 24-inch HD behemoth from LG (L246WH-BN, \$500, www.lge.ca) is a dazzling step up from your 13-, 15- or even 17-inch laptop screen. With a 16:10 screen ratio (1920x1200) perfect for watching TV and movies, HDMI-in and 170 degrees viewing angle in either direction, there's definitely an entertainment hook. However, its massive screen real estate makes it perfect for side-by-side comparisons of spreadsheets, keeping an email or web browser open on one side of the screen while working with a word processing document in the other or any number of other productivity-boosting things that can be done with the extra screen space. 22-inch screens can be had for significantly less and even a 19-inch LCD monitor is a stark improvement over the tiny screens of some ultra-portable notebooks.

In the end though, the ultimate home office is the one that is comfortable and enjoyable to be in and contains the devices and technology that work best for you.

By Andrew Moore-Crispin



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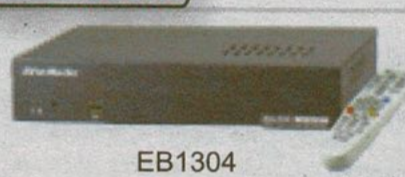
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Motion Det. USB Supp. SD 5V



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w/Camera Build in 500K/Min USB

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DVR Capture Cards

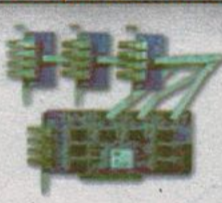
4 TO 64 CH.



Skyview DVR PCI Card
SZT 4 CH (120fps)



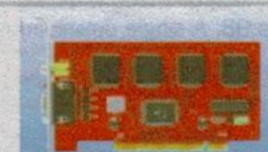
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0-Lux 12V



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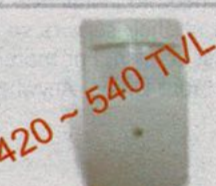
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Office Alternatives

A look at the main competition for office suite supremacy

In the early '90s, WordPerfect and Lotus 1-2-3 were the dominant word processor and spreadsheet, respectively. There were several good presentation packages available and dBase dominated among databases. Although Microsoft didn't lead in any of the office productivity categories at the time, it was the only company with strong contenders in every category. Microsoft decided to sell its office productivity applications as a bundle and at a lower price than if they were purchased separately. Office was a success immediately and has been the leading office suite ever since. It is easy, sometimes, to lose sight of the fact that there are lower-priced alternatives that may do a better job for you.

MS Office has always had competition. Its traditional competitors have since disappeared (Lotus SmartSuite) or become niche products (Corel WordPerfect Office X4 which evolved from Novell Office). At the core of the Corel suite is WordPerfect, which is revered in some quarters for its "reveal codes" approach to editing. WordPerfect is still considered by many to be the best word processor for controlling very long documents.

However, the leading competitors currently are of a different breed. They are either free (OpenOffice.org), online (Google Docs, Zoho), or a mixture (Thinkfree Online is free but Thinkfree isn't). All of these are Microsoft-compatible and easy to use, regardless of whether you are familiar with Office or not.

OpenOffice.org has tens of millions of users around the world and for good reason. OOo is free and open source and very compatible with MS Office, both in terms of file formats and user interface.

The way to start using OOo is to download it from www.openoffice.org in the appropriate version. There are versions for Windows, Linux, Mac OS, and Solaris. Unlike MS Office, the latest version of OOo runs on every version of Windows produced, starting with Windows 98. A single download is all you need to

install OOo legally on every computer in your business or home office. Being freed of the obligation to pay for and manage licenses is a tremendous advantage.

OOo consists of the basic productivity applications: a word processor (Writer), a spreadsheet (Calc), a tool for creating multimedia presentations (Impress), a database application to access, create, and manipulate databases (Base), and a tool to create sketches, drawings, and diagrams such as flowcharts, organization charts, as well as two and three

dimensional objects of great complexity (Draw).

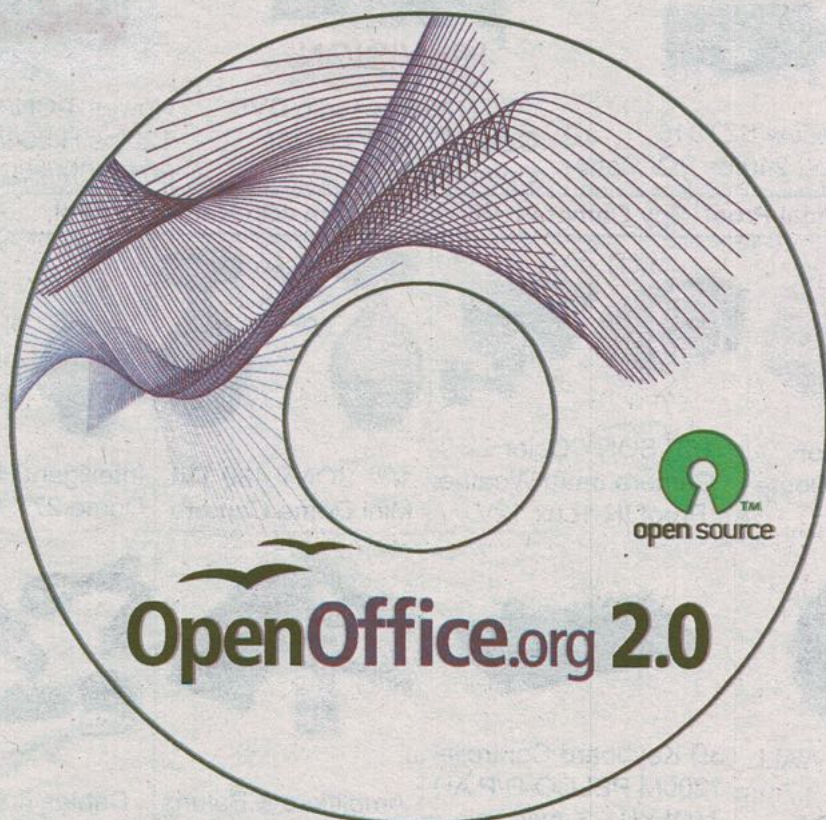
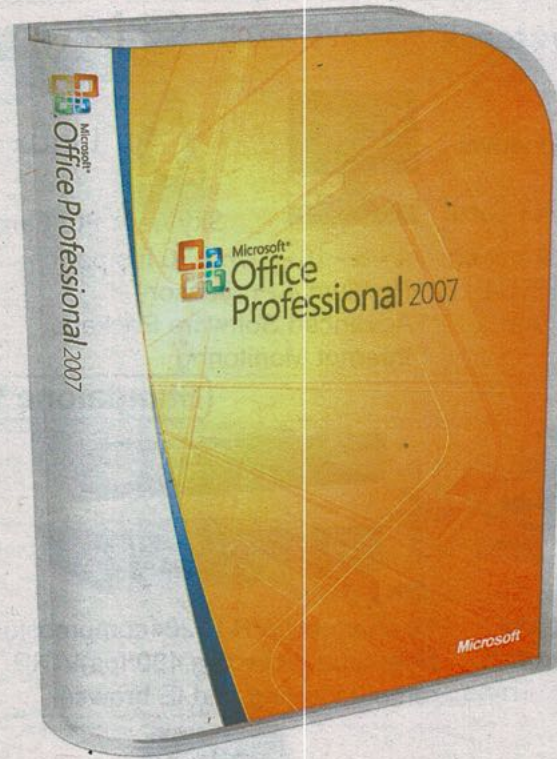
All of the applications in OOo are powerful and have feature sets comparable to their counterparts in MS Office. File formats up to Office 2007 are no problem, with the exception of some new formats such as docx introduced in Word 2007. The current version of OOo is 2.4. Version 3 will be released later this year and among its many new features will be the capability of reading and writing docx and other formats introduced in Office 2007.

The applications in OOo aren't straight clones. They all have significant features that are missing from Office. A visit to www.openoffice.org will reveal if there's a feature or two that will make a difference for you.

If you decide to begin using OOo with your MS Office files, there's an issue to be aware of. If your Office files such as documents and spreadsheets contain macros, you will have to recreate or edit them in OOo because the two suites cannot run each other's macros automatically.

OOo is excellent software but it isn't for everyone. Users who value portability and ease of collaboration often appreciate the benefits of an online suite. Google Docs is the most widely-used online suite of office productivity applications. It is free, although there is a business version that offers better support and more online storage space for files. It has a word processor, spreadsheet, and presentation package. It is easy to learn and use, it is compatible with the important file formats, and it is constantly improving. There is never any need to install new software. Google takes care of that on their servers so that you are always using the latest version. For more on online office suites check out "Your Office, Anywhere" in this issue.

By Issie Rabinovitch





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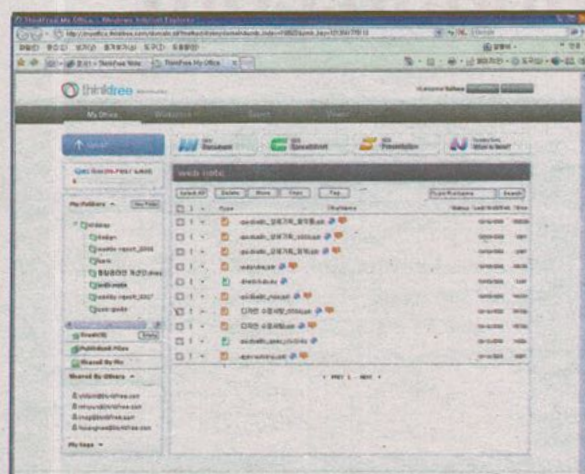
Your Office, Anywhere

Online office suites put your documents in the cloud

The usual way to denote the Internet in a network diagram is to draw a cloud. Some people think it's smog but I'm pretty sure it's a distant plague of locusts and 419 scams. Whatever type of cloud you think the Internet is, when people talk about cloud computing, they're talking about running applications on any machine with Internet access, regardless of OS. This means you don't have to have a specific application installed on the machine you're working on, you just go to the website and start working away.

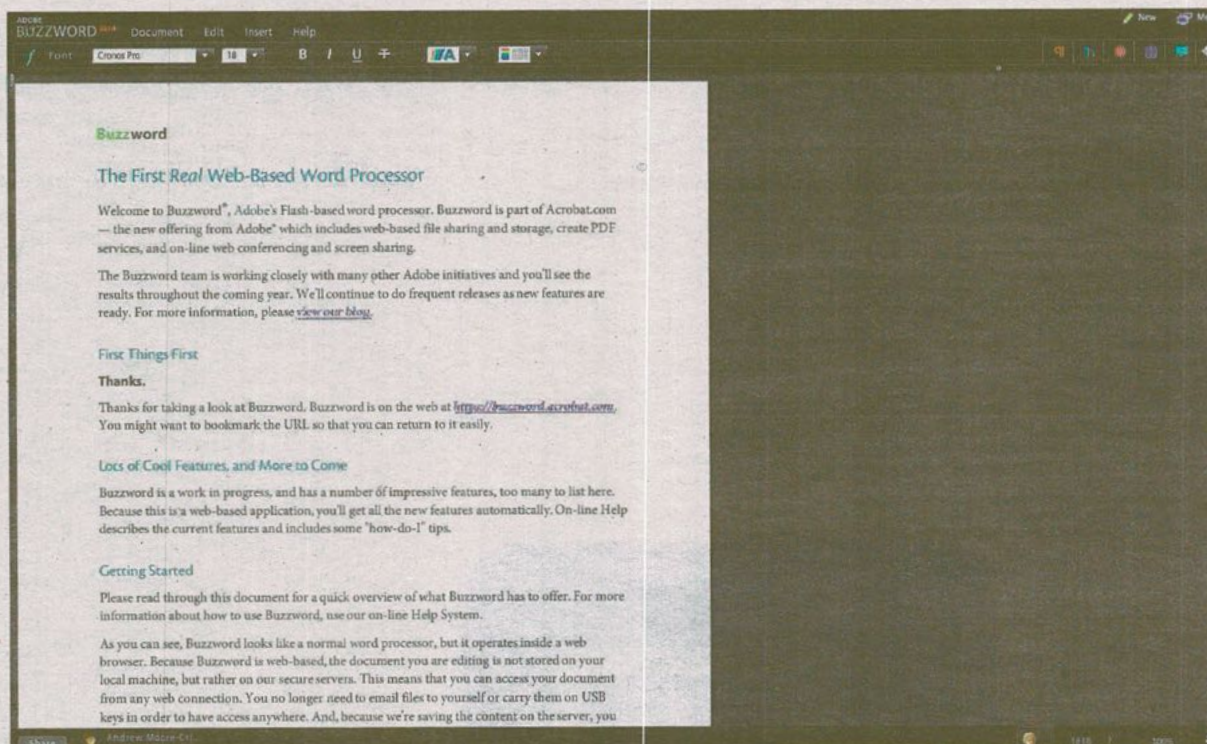
This means an end to carrying around a flash drive only to find that the computer you have access to doesn't have Word or — worse — losing it and losing any future employment prospects along with it. However, all is not necessarily heaven in cloud computing. You need a persistent and fast connection to the provider's site and you are at the mercy of their uptime schedule and security. Check out these free office suites ready to run from the most isolated cabana in Cuba to your own personal secure computing site.

Google Docs
docs.google.com



Google likes to be different. Acquired in a buyout of start-up Writely, their online office suite is comprised of word processing, spreadsheet and presentation software with some interesting features. For instance, they allow you to set up an RSS feed to notify coworkers of document updates. Also, the spreadsheet can easily be set up to take data from an online form. There's also version tracking and rollbacks, file sharing, and the software can run offline on any computer with Google Gears browser extension installed.

Heck, you can even email your account with your documents and they're auto-magically converted and uploaded. Although, don't count on your Microsoft Office documents maintaining their formatting. These guys certainly do get the Net, but some of the basics are lacking. The word processor doesn't generate footnotes, endnotes or a table of contents. This is standard for the academic set. The font selection is very limited and so are image text wrapping options. And there are a paltry seven font sizes available. Ugh. The word processor is a dog but the spreadsheet covers most bases quite nicely. It's a bit different than Excel but easy to learn. The presentation software is basic but useful too. You can have 5,000 documents



and presentations and up to 1,000 spreadsheets. Keep an eye out for upgrades.

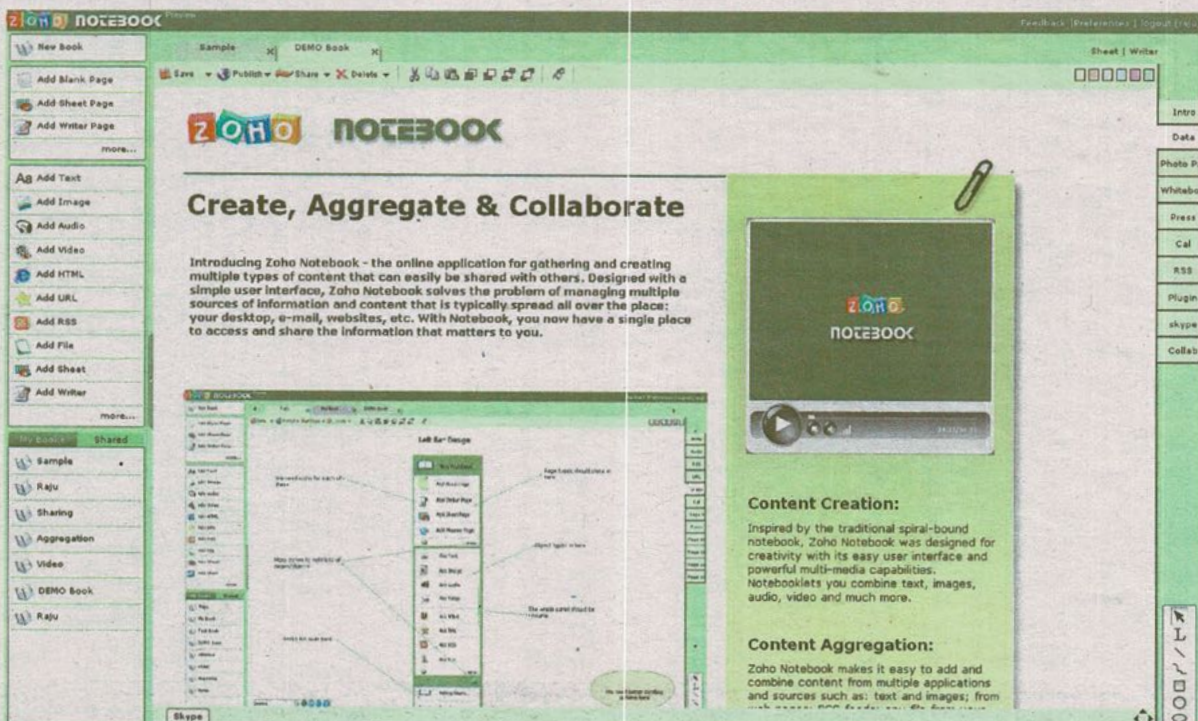
Zoho
www.zoho.com

Zoho offers a wide selection of online applications including Writer, Sheet and Show. Writer is quite different than Microsoft Word but you won't be too challenged to learn it. It seems to be a hybrid between an HTML editor and a word processor. It certainly has a fuller feature set than Google Docs and it supports footnotes and endnotes. That's two thumbs up for academic writers out there. However, image text wrapping isn't well implemented, nor are columns and tab setting. Writing a newsletter will be arduous. Uniquely, writing contracts for business is supported using EchoSign digital signatures. This allows you to

write up a contract like, "By signing this iPhone agreement, you agree to be Ted Rogers' poolboy one day a month in perpetuity" and actually get it legally signed by other parties. Writer is also available for download to work offline.

Its productivity and collaboration apps include a word processor, spreadsheet, presentation software, and also Notebook (Online Note Taker), Wiki, Planner (an organizer), Chat, Start (a dashboard for your documents), and Mail. These are all free. There's also a good choice of business apps, including Projects, CRM, Invoice, Meeting, Creator, DB and Reports, People, and Business. There are fees associated with these, although some of them are free in "light" versions.

Zoho Sheet is, arguably, the best of the bunch. It supports pivot tables and macros, charting and has a



broad set of functions. Zoho Show is also definitely useable and uploaded a PowerPoint 2003 file, though with some issues such as a long URL not wrapping in a table and contrast reduction in a background graphic not being passed. It, like Google Docs, doesn't support charts. In general, Zoho supports sharing with read and read/write privileges but doesn't track changes which can make collaboration challenging. There is no online storage limit posted. Zoho is a great choice for students or business users who need a broad set of applications.

Zoho has a plug-in for Microsoft Word and Excel that bridges the gap between the online and standalone worlds. This plug-in is free and appears in the menus of the two MS applications once it is downloaded and installed. You can save your Word and Excel files online with Zoho and you can access online files from the MS apps and edit and save them locally. You can take advantage of the best aspects of both worlds as required. It's an effective approach.

Acrobat.com

www.acrobat.com

Acrobat.com is Adobe's foray into online business applications. Unfortunately, it is missing both spreadsheet and presentation applications. It's included in this article due to its backer and likelihood to grow. It has a word processor, an online meeting application and a PDF converter. The main application is Buzzword which uses Flash as its underlying technology which is both a blessing and a curse. Flash doesn't allow right-

click context-sensitive menus as this function is used by the Flash player itself and downloads are hefty, slowing things down. Still, the interface is the slickest available. Too bad Buzzword is so slim on features. There are only seven included fonts... nice ones, but still. Image text flow is rudimentary, there's no column support, footnotes or table of contents generation although endnotes are supported. File sharing is the best here as read, read/write and read/comment privileges are supported. The Microsoft Word 2003 test file loaded with minor issues losing drop caps and with text formatting of a graphic. Adobe allows up to 5GB of free storage. Definitely something to keep an eye on.

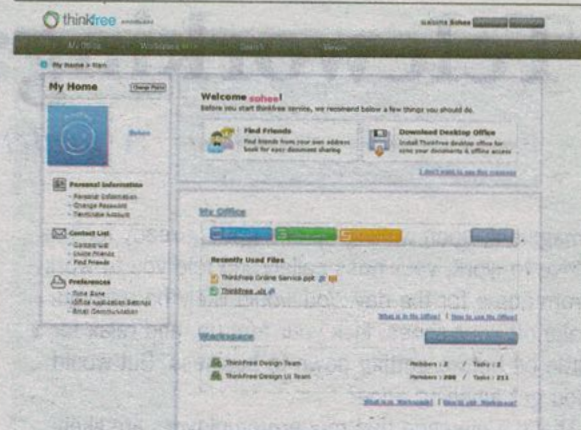
ThinkFree

www.thinkfree.com

ThinkFree is definitely the Cadillac here and includes Write, Calc and Show. All three types of Microsoft Office 2003 test files loaded without any issues and this was the only suite reviewed here to do so. It also has an offline version. The main problem is speed as it seems to download a lot of program code during initial operation. However, once things are cached, this stops being an issue. This does have ramifications if you're playing musical computers on the road though.

Write supports footnotes, endnotes and generating a table of contents. It also supports a complete set of image text flow commands and multiple columns.

Suffice it to say that, if you're a business person or a student, you will find Write completely satisfactory if



you like Microsoft Word. Calc, the spreadsheet program, has broad charting support and a full set of functions. Sorry, no pivot tables, macros or conditional formatting but how often do you need these features anyway? The only thing that is a bit of a let down is the lack of charting support in Show as most business users need this at some point. ThinkFree offers 1GB of storage. Sharing is supported. This is likely the best choice for most users.

By Andrew Carruthers

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Teleworking: The New Business Reality

A neater and greener alternative to the daily commute

Imagine if, upon waking up and getting ready for the drive to work, your boss called and told you to work from home for the day. You would likely be relieved, take off your shoes, kick your feet up, and relax for a little bit before getting down to business. But would you get anything done?

That's a question that modern employers are likely going to be asking themselves as the prospect of having employees work from home — a practice that is known as teleworking or telecommuting — increasingly becomes a point of interest. And while a small number of workers might be unable to commit to telework for lack of motivation, the ability to cut out the daily commute to and from the office is a step in the right direction as far as the environment is concerned, and would free up valuable time otherwise spent commuting for the employee.

David Dunn, leader of Nortel's workplace planning, innovation and construction, is a great supporter of the teleworking concept as a whole. That's because he's been with Nortel for more than fifteen years, which is how long the company has been equipped to telework.

"It was fifteen years ago we developed our teleworking strategy, so I've been living and breathing it for quite some time," Dunn said. "It came about in

essence during the advent of discussion about alternative officing strategies and the beginning of the mobility that was enabled by technology."

And fifteen years later that technology has come a long way. Even with just a laptop and a broadband connection, an employee would be able to hold voice or video conferences, call people over VoIP, check and send e-mails, share various files and data via cloud computing, keep in touch by instant messenger, and so on. This could be done at any hotspot anywhere in the world — and with WiMAX supposedly on the horizon as the next big way to stay connected, those hotspots could be anywhere and everywhere.

The benefits to teleworking are as obvious as the drawbacks. Workers essentially wake up at their workplace (read: home) and get to it as per their normal schedule, without commuting. This means that they are both more comfortable and more in control of their surroundings. It could also mean that they have more distractions and things to do instead, however. A disciplined worker is a productive worker, whether in the office or working from home, but if they are working outside of the office they are unsupervised, and only check in as often as is required.

Give and take

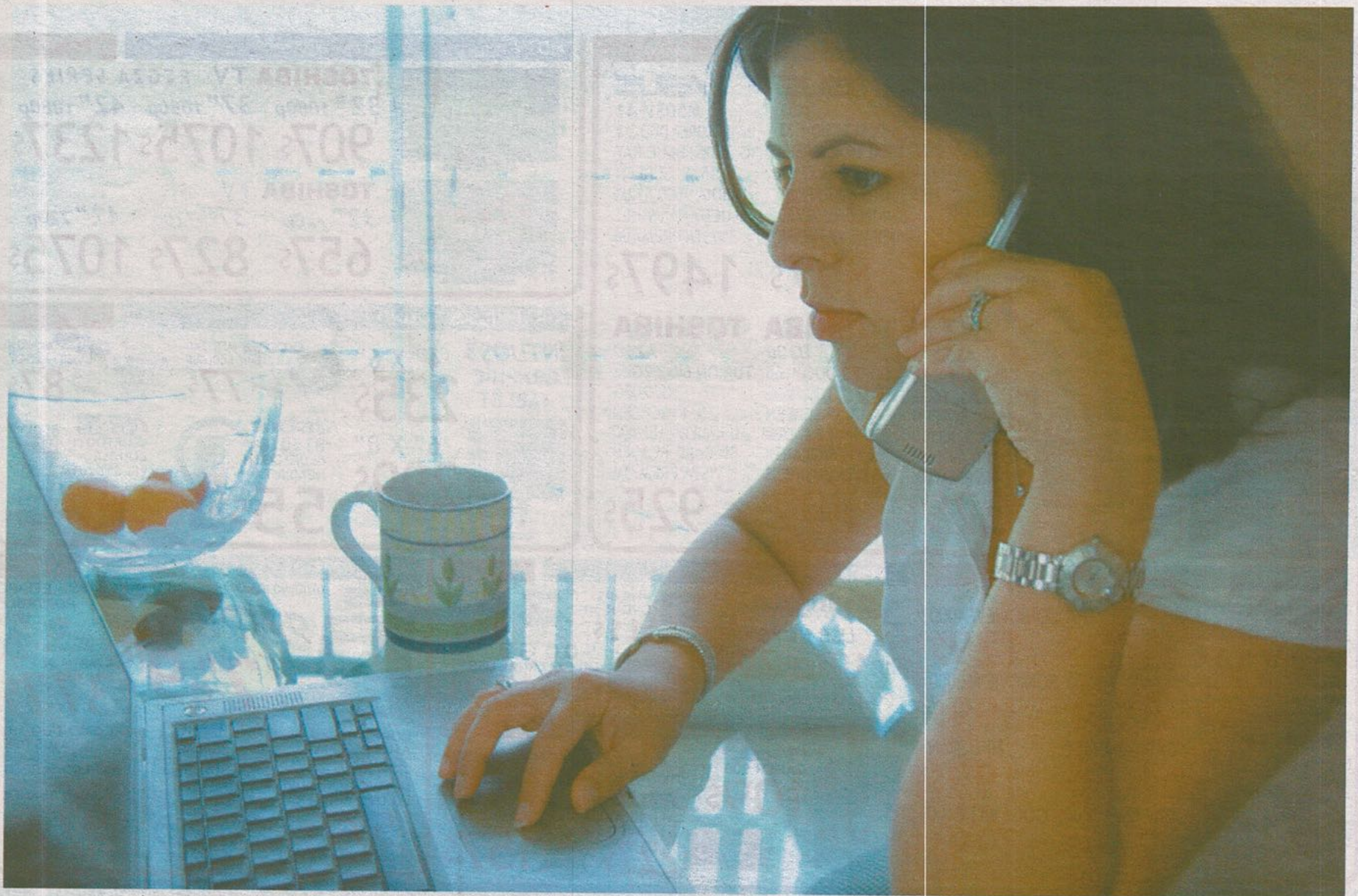
While it may be hard to swallow for traditionalist managers, teleworkers can potentially be just as productive as their office counterparts and in most cases only telework part of the time, and go in to the office on a regular basis for team meetings, planning and workplace interaction.

"Our studies over the years have pointed out two things: teleworkers are more satisfied workers, and tend to be high-performance employees, and as a result demonstrate higher productivity," Dunn says.

It's important to note that while talking over the telephone, Dunn was actually using VoIP from the woods somewhere south of Ottawa, but — as he pointed out — could just as easily have been speaking to me from Beijing.

"During the blackout (around Lake Ontario) a few years back we maintained productivity despite everything," Dunn said. "The company maintained 85 per cent productivity, and we demonstrated that whatever the event, there is capability for productive work."

Neither Dunn nor Nortel is alone believing in teleworking. Michelle Digula, general manager for Sony/Ericsson Canada has also stated her support for the teleworking trend.



"With Sony there is no policy on how much you can or cannot work from home, it's up to me and the team to decide," Digula says. "My personal work philosophy requires a lot out of people, and the job sometimes requires working weekends and evenings, so we balance that with being able to work from home."

Of course, the fact that both Sony/Ericsson and Nortel are in the communications business, and are big players at that, means that they have easy access to the equipment and technology that they need to maintain maximum productivity while working out of office. Both companies supply their employees with laptops and other equipment necessary to facilitate good communication between team members, which is something some companies might not find as easy or affordable to do.

"I think there are a couple of people that need to be in the office more than others; my assistant needs to be in the office most of the time to meet and greet people so it's difficult for her to work from home," Digula admits. "The operations people need access to files and papers, and do massive printing, which is easier to do in the office. But even they work from home one day a week."

Take your kids to work day

The ability to work from home is also good for those who have children. Digula has one daughter and appreciates the flexibility in her company that allows her to work from home and spend time with her child.

Nortel's April Dunford also has two small children, and values the two days a week that she works from home.

"When I was looking for a job, the ability to telework was a huge deciding factor in my job search," Dunford said. "I wanted to find another job that allowed that, and the biggest reason is that I have two small children, aged four and two."

There are many reasons that teleworking is good for business, but it might also be an excuse for some employees to shirk their duties.

Karyn Evans is the senior director of human resources at Linksys — a company literally built around networking — and even she admits that teleworking isn't always the answer.

"Teleworking is not for everyone. Potentially there are drawbacks with employees that are not disciplined or structured enough to work at home," Evans says. "Also if the employee needs a lot of 'hands on' direction, and is not a self starter, that could present a problem."

But discipline and motivation aren't the only issues. "Not all positions have responsibilities that can be met from home," Evans continued. "We review all roles and responsibilities to determine if the position can allow home working on a part-time basis."

A smaller footprint

Beyond balancing work responsibilities and home comfort, there is another stakeholder in the teleworking debate that we're all dependent on, and that is the Earth.

"(Teleworking) is a very important green strategy, one

that will reduce our carbon footprint," Dunn says. "One day a week of working from home could reduce a person's gas expenses significantly."

And Dunford also agrees with this statement, saying that her company's research has found that about 80 per cent of a person's carbon footprint usually comes from commuting alone, so keeping the fridge door closed or dimming the lights pales in comparison.

Besides obviously cutting out a significant chunk of commuting time, teleworking can also help a business slash overhead expenses. Less employees in the office means less office space required, which in turn means less money spent on renting, leasing, or upkeep, as well as maintaining the heat, air conditioning, and electricity.

So, is teleworking right for you or your business? Maybe it's time to ask.

Because as communications technology becomes more reliable and more advanced, the traditional office space may become a thing of the past, making way for companies that are more closely connected digitally — even if their workers are hundreds of miles apart.

By Dorian Nicholson

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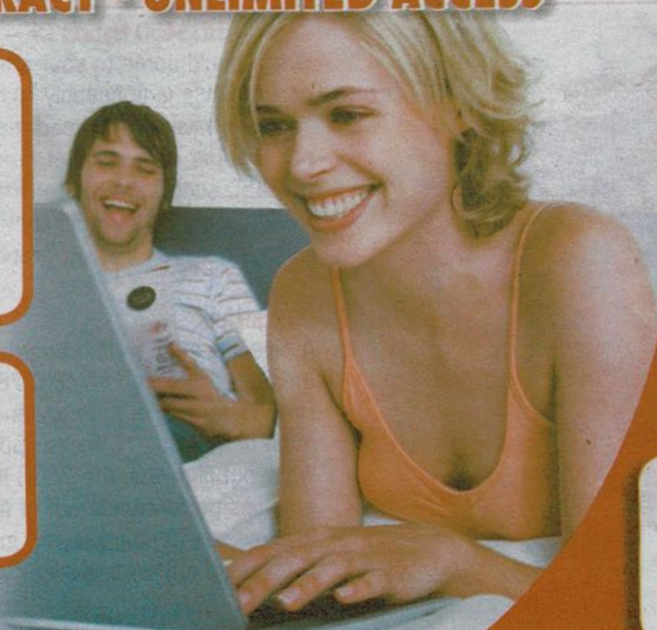
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Integration For Business Users

Sapphire Pure PI-AM2RS780G

In the land of affordable PCs, the integrated motherboard is king. Naturally, an inexpensive, integrated computing solution is ideal for the small or home office — they're not only affordable but also deliver performance where you need it. Sometimes though, depending on the office environment they're used in, additional horsepower may be required. For example, if your business tends to use a lot of graphics-heavy media content, or your work computer doubles as your home computer (although we'd suggest not going this route unless absolutely necessary) more performance may be required.

Finding a fully integrated motherboard with decent graphics performance is definitely a challenge. Along with driving up cost, a lot of times even the best onboard video is still weak. Enter Sapphire's 780G-based, Pure PI-AM2RS780G, a motherboard with integrated DX10-capable graphics hardware and enough room for expansion to allow a more than adequate upgrade path, should the need arise.

Everything you need

Combining AMD's 780G Northbridge with their SB700 Southbridge gives the PI-AM2RS780G great performance and support for all of the latest technologies. Utilizing an AM2/AM2+ CPU socket means the AM2RS780G can run even the fastest available AMD processors, while the four DIMMs can house up to 16GB of DDR2-800MHz in Dual Channel.

Built-in connectivity includes a whopping 10 USB2.0 ports (four of which are located on the back I/O panel, while the remaining six can be attached to the mobo), four SATA2 ports, and a standard E-IDE and floppy drive connector. With two traditional PCI ports and a single PCIe x16 port, you'll also be able to install a number of different discrete add-in boards if you need to. That said, with integrated eight-channel audio, built-in DX10 graphics hardware, and Gigabit Ethernet, chances are it already has everything you need.

The only problem I have with onboard/integrated graphics solutions is that, even at their best, they're still entry-level. It's a harsh truth, but an honest one. So even though the Sapphire Pure 780G has one of the most advanced integrated GPUs available, it's still an onboard solution. What does this mean for the average user? Not much. However it's worth mentioning to those who plan on using their system for something like CAD or 3D animation — it's not that 780G IGP couldn't handle these kinds of applications, just that professional graphics hardware would be more up to the task.

For average PC users — the ones that not only make up the vast majority, but also tend to be the most price-cautious buyers in the market — the 780G has more graphics power than you'll ever need. The AM2RS780G is especially potent because of Vista's rather hefty video card requirements; the 780G IGP can easily run aero-

glass, shadows, and any other of Vista's visual tweaks. Furthermore, because the 780G IGP is effectively an AMD HD3200 graphics chip (built on the RV610 core) it has great hardware assistance for HD video playback, meaning you could smoothly run 1080p video (from Blu-Ray or HD video file) with even an entry-level AMD Sempron CPU.

Hybrid Crossfire!

One of the Sapphire 780G's biggest selling features is its Hybrid Crossfire support, allowing you to install an additional AMD HD34XX video card for more graphics horsepower. Whereas CrossfireX allows the use of a pair of any AMD graphics cards (two HD3870 x2s, two HD4870s, etc.), Hybrid Crossfire combines the integrated graphics chip (in this case the HD3200 that serves as the 780G's IGP) with an additional HD34XX add-in graphics card.

Unfortunately Hybrid Crossfire is only compatible with the entry-level HD34XX series of cards. Ironically, while still offering a substantial boost over the standalone 780G performance, the added prowess of an entry-level card is only marginal, so it may be hard to justify the added cost. In other words, adding an HD3450 won't magically make Crysis — the most visually impressive and graphically demanding game currently available — run at 1920x1200 at 60 frames per second.

In many cases, users would be better off splurging on a higher-end HD3600 or HD3800, which have reduced in price considerably now that the HD46XX and HD48XX series of cards have been launched. It won't take advantage of Hybrid Crossfire, but the performance improvement would still be more substantial. Luckily the PCIe 2.0 slot on the AM2RS780G is a full-sized x16 slot, so the motherboard can actually take full advantage of even the highest-end graphics cards if you have the cash.

While the usefulness of this feature for the average user is up for debate, one thing is for certain: the implementation of Hybrid Crossfire is beautiful. Simply plug in an HD3450 add-in board and Crossfire between it and the 780G IGP is automatically enabled and taken advantage of. It's by far the simplest multi-GPU configuration we've used, which is a boon for both system builders and first-timers (cuts down on time and cuts down on headaches). If you don't need the additional performance improvement offered by Hybrid Crossfire, you can still take advantage of the quad-display support that the feature enables.

Performance

To test out the 780G's integrated HD3200 IGP and Hybrid Crossfire, we've included benchmarks of the 780G, a discrete AMD HD3450 add-in card, and then the results of 780G+HD3450 running in Hybrid Crossfire so you can see the advantage of the feature.

3DMark 2006 (Default Settings)

780G IGP – 1,171

Sapphire AMD HD3450 – 1,713

780G + HD3450 Hybrid CF – 2,209

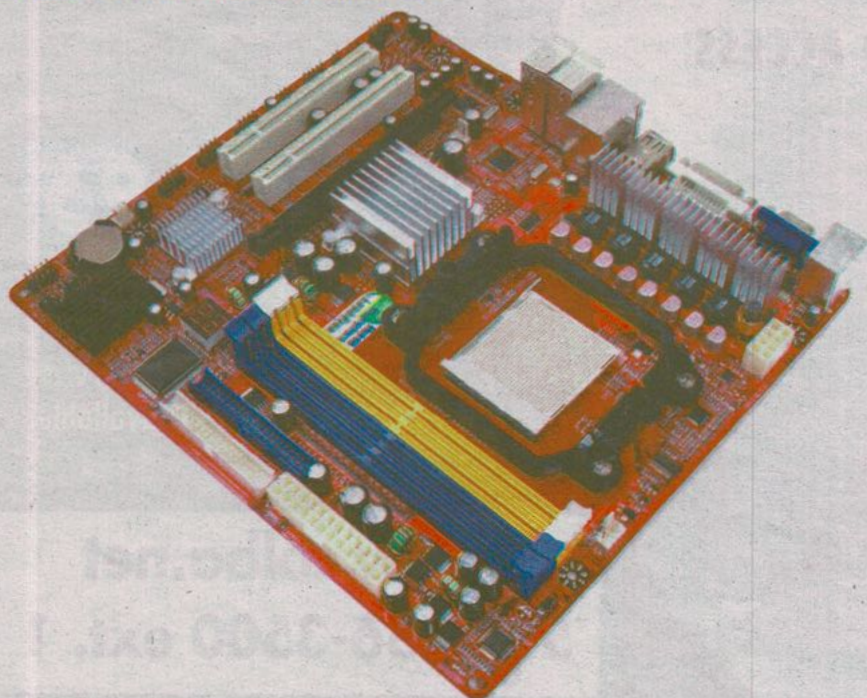
What should come to your attention immediately is that the Hybrid Crossfire performance is noticeably higher than both the standalone 780G and the HD3450. You may have also noticed that the combination performance of the 780G+3450 is not 100 per cent efficient — rather than achieving a perfect combination of 780G + HD3450 scores, we get an improvement that of roughly 1,000 points (~1,200 to ~2,200). This is to be expected with multi-GPU configurations as there will always be latency between the two graphics chips as they communicate with each other.

Conclusion

A bleeding-edge motherboard with integrated video may sound like an oxymoron, but the Sapphire Pure PI-AM2RS780G offers great performance in an all-in-one package. Drop in your CPU, memory and hard drive and you'll be ready to take on even the most demanding business applications as well as all of Vista's bells and whistles. While not high-end, the 780G IGP serves as gateway hardware — it has enough graphics performance out of the box to whet your appetite, and enough expansion to allow you to upgrade and grow your system in a way that best benefits you. It's a simple and effective solution that covers all the bases.

By Mike Palermo

Sapphire Pure PI-AM2RS780G motherboard



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By Dorian Nicholson

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Clicktoy's Meadow Teaches Children to Play

By Dorian Nicholson

The Meadow has been available for children to roam around in for about four months now. The latest software from Clicktoy Interactive lets young children digitally interact with their virtual surroundings in its own interesting pop-up book style format. But it's not a game says creator Ken Kavanagh. It's a toy.

www.hubcanada.com/index.php/dnicholson/

Breaking News:

Facebook Meets Frommers with ZoomAndGo

By Harry Powell

Backpackers and vacationers anywhere in the world can now upload their own photos from a computer and generate personalized, printed postcards that are then mailed out, through the postal service, to recipients thanks to the popular www.ZoomAndGo.com travel web site.

hubcanada.com/thefeed/350

Staying Intouch with I'm InTouch

By Harry Powell

01 Communique Laboratory Inc. announced recently the release of I'm InTouch Premium. I'm InTouch Premium enables organizations to provide employees with cost effective remote access to their workstations from anywhere.

hubcanada.com/thefeed/349

iPhone Gets its Own Section of The Star

By Dorian Nicholson

Owners of the wildly popular iPhone now have a section of the Toronto Star website developed specifically for their browsing pleasure. Internet surfers at home or on their phones can check out the new corner of the site by going to

www.thestar.com/iphone.

hubcanada.com/thefeed/345

Future Shop Launches ConnectPro for Tech Help

By Harry Powell

Did you know that 46 per cent of Canadians consider technology to be important in home décor? Well Future Shop is coming to the rescue. Starting July 18, 2008, Future Shop launched its new ConnectPro service, allowing Canadians the opportunity to work with experts to perfectly install their home theatre systems and more.

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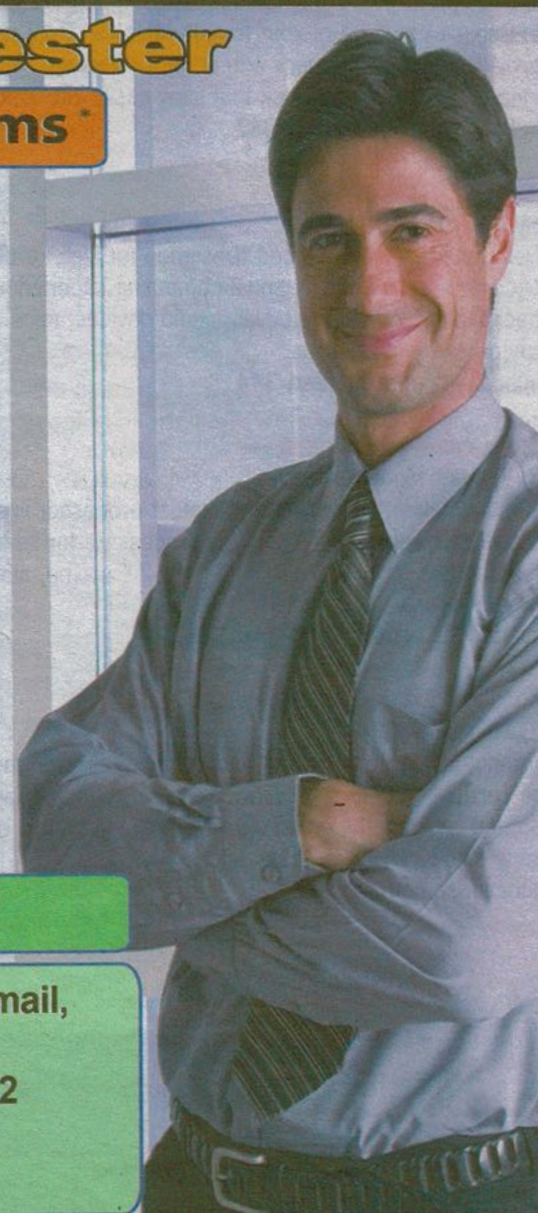
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Is That a Compass 597 USB Modem in Your Pocket?

By Harry Powell

Sierra Wireless has announced that the Compass 597 USB modem is now available in Canada courtesy of your friends at Telus. The Compass 597 USB modem provides Telus customers with access to wireless high-speed Internet in a small, cleanly designed USB stick that slips easily into a pocket.
hubcanada.com/thefeed/347

Dell Gets Cool

By Harry Powell

Dell Canada has introduced "Designed for Dell," a designer line of bags and accessories for your personal computing experience. The first selection of backpacks, computer sleeves, audio devices, mice and hard drives are distinguished to complement Dell PCs.
hubcanada.com/thefeed/344

Intel Centrino 2 Revealed

By Andrew Moore-Crispin

Intel has taken the wraps off its latest processor line, the Intel Centrino 2 and Centrino 2 with vPro Technology processors for laptops. Also introduced was a dual core mobile processor the Intel Core 2 Extreme, along with five new Intel Core 2 Duo processors.
hubcanada.com/thefeed/346

The Need For Speed Comes to the iPhone

By Harry Powell

Toronto-based company Spreed Inc. has released their first version of Spreed:News, an application that may enhance the way people read news on mobile phones. Spreed reduces the problems which plague mobile devices and cause a variety of mobile news reading problems.
hubcanada.com/thefeed/343

Blind Runner Set to Go for Gold in Beijing Thanks to T-Base

By Dorian Nicholson

Canada now has another runner for the 2008 Olympics in Beijing. Jason Dunkerley was recently announced as an addition to Team Canada. The athlete can run 1500 metres in just over four minutes and 800 in a fraction over two and his record times are just seconds off of being world records in the Paralympics' B1 class.
hubcanada.com/thefeed/335

New Products:

Kodak Reveals New Lineup of Products Due Out Later This Year

By Dorian Nicholson

Earlier this month Kodak Canada Inc. announced what will be their new line of digital cameras and accessories, due out later this year. These products varied from the latest additions to their M-series and Z-series camera line, as well as brand new wireless digital picture frames.
hubcanada.com/thefeed/342

Samsung's m530 Olympic Team Edition Phone Now Available

By Dorian Nicholson

With 2008 Olympics in Beijing, many Canadians will be looking for different ways to keep informed of how our athletes are faring. That's why Bell has just released the exclusive Samsung m530 Canadian Olympic Team phone with the ability to subscribe to Bell Mobility's Beijing 2008 video bundle.
hubcanada.com/thefeed/331

Bell Unveils New Wireless U727 USB Modem

By Harry Powell

Bell Canada recently launched the exclusive Novatel Wireless U727 USB modem, the first mobile data device available in Canada that features a USB key design with a removable memory slot. The U727 also doubles as a data storage device, capable of housing a microSD card with up to 8 GB of memory.
hubcanada.com/thefeed/330

Linksys' New Dual-Band Router Makes Wireless Media Faster

By Dorian Nicholson

With the unveiling of the Simultaneous Dual-Band Wireless Router, or WRT610N, Linksys released yet another router aimed at SOHO users and more demanding users of media at home. The main advantage of the new product is all in the name; operating on two bandwidths, 5 GHz and 2.4 GHz.
hubcanada.com/thefeed/328

Bell Canada the First to Release the Samsung Instinct

By Harry Powell

On August 8th, Bell Canada will introduce the Samsung Instinct, a stylish and highly intelligent touch-screen mobile phone. A hot seller in the United States since its introduction there last month, the Samsung Instinct offers easy touch or stylus navigation on its full QWERTY touch-screen keyboard.
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Compiled by Dorian Nicholson





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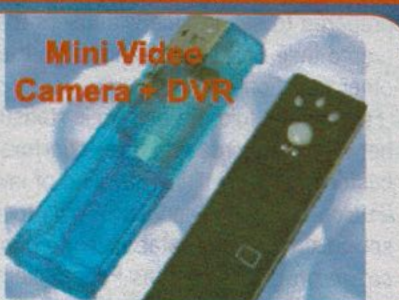
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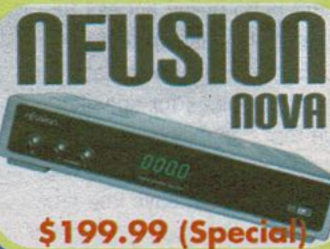


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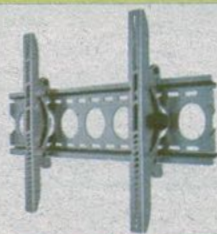
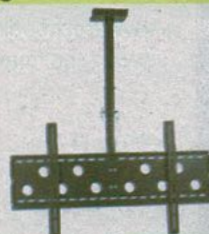


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Taking it to the Bank

Two online invoicing services compared

Freshbooks sounds like it might be the latest social networking site but in fact it is something more useful: an online invoicing and time tracking service. Priced to suit individuals such as freelancers, it can be used by small- and medium-sized businesses as well.

In a visit to the company's offices in Toronto I learned that they are extremely proud of their customer service, which they feel sets them apart from other companies offering services online. A toll-free number is available to get support directly from the developers between the hours of 9 a.m. and 6 p.m. EST. They are prepared to spend time with users to help them create their first invoice and to go the extra mile for other questions.

Freshbooks told me that their statistics show that between two-thirds and three-quarters of their new customers aren't using any kind of invoicing system, let alone an online service. Word processors, spreadsheets, and databases are commonly used but so are programs such as Pagemaker and even more bizarre choices. These applications may produce a good looking invoice, but the time required can be considerable and the chance for errors is high.

To appreciate what Freshbooks does for invoices, it is best to try the demo at the Freshbooks site. However, in a nutshell, Freshbooks lets you create invoices from a variety of templates, customize them with your logo and information so that they look the way you want, record the time spent on projects and clients as you go, manage your clients, and then create, issue, and track invoices with less effort than you are accustomed to.

The invoices can be printed and sent by post or e-mail, or clients can be e-mailed to notify them of their account, giving them access to see their invoices, estimates, support tickets and documents online.

Arrangements can be made for clients to pay invoices online. Freshbooks works with several services,

including PayPal and Authorize.Net. PayPal is most popular for low-volume accounts while Authorize.Net is better (that is, cheaper) for accounts that bill in excess of \$2,000/month.

From the standpoint of the client, payment is very easy with a credit card while there are a few more steps with PayPal.

A faster way to do business

Freshbooks claims that its users report that invoicing takes a quarter of the time it used to and that they get paid two weeks faster. The latter is due in large part to online payments by clients.

There is great flexibility in creating invoices, including recurring ones, and there are powerful tools for tracking them. Freshbooks can be configured to automatically send invoices and late payment notices.

In addition to tracking your time, you can also keep track of your expenses. You can bill back the expenses incurred on a client's behalf when you generate an invoice. You can run reports to see who your most profitable clients are and who is most productive on staff. You always have an up to date picture of how you and your company are doing.

Freshbooks caters to English-speaking North America, with 55 per cent of its users in the US and 15 per cent in Canada. There is also a large contingent in the United Kingdom.

Freshbooks is a service that requires no local installation of software. It works through a browser and it doesn't care if you're using Windows, Mac or Linux. I saw many Macs during my visit to their office and learned that their developers are heavily influenced by the Mac interface.

Freshbooks offers accounts of various sizes, based on the number of active clients you can manage and the number of staff who can access your account. The largest standard account allows up to 20 staff and up

to 5,000 clients. It costs \$149/month. The smallest account allows one person to manage up to 25 active clients and costs \$14/month. Every account is month to month and can be cancelled at any time. The number of invoices that can be sent is unlimited for all accounts and Freshbooks is prepared to provide custom accounts based on your requirements.

Freshbooks allows you to sign up for a free account for 30 days. You can sign up for any account and cancel within 30 days if you are unhappy. Also, you can use a free account to manage three active clients if that's enough for your purposes or if you need to evaluate the service for a longer period than one month.

For a small fee, Freshbooks will send mail invoices by post, with the correct postage, straight to your clients without any handling by you. Some clients prefer to be billed this way. Each invoice is printed with your logo and includes a return envelope for the client's convenience. A free snail mail is included with every account.

Options available

Another online service, Zoho, has recently added invoicing to its online offerings. Zoho is a free suite consisting of nine productivity and collaboration applications and also seven online business applications for which it charges a fee. Zoho Invoice provides many of the same capabilities as Freshbooks. If you use or plan to use any of the Zoho online applications, there may be an advantage in also using Zoho Invoice as there is already integration with Zoho Projects.

Zoho's prices for Invoice are lower than Freshbooks', presumably because they have income from a variety of products. Freshbooks has just the one product. Zoho offers a free account that is good for five invoices and estimates per month for an unlimited number of clients. Paid accounts range from \$5/month for 25 invoices up to \$35/month for 1,500 invoices and estimates. Zoho is also prepared to customize its plans, which can be cancelled at any time.

Zoho offers many of the same features as Freshbooks but customer service isn't nearly as good, there is no snail mail service, and there is no online access to invoices for clients. Another distinguishing feature between the two services is that Freshbooks lets you assign which staff can handle invoices for specific clients. Zoho doesn't have that capability.

The bottom line is simple. Competition is good and Freshbooks and Zoho Invoice will both save you time and make you more money than the cost of whatever plan you choose.

www.freshbooks.com
www.zoho.com

By Issie Rabinovitch

	Sales	Receipts	Due
Today	0.00	0.00	0.00
This Week	0.00	0.00	0.00
This Month	0.00	0.00	0.00
This Quarter	0.00	0.00	0.00
This Year	0.00	0.00	0.00

In the Lab: All in One Printers

Multi-function printers that do as much as you do... almost

As desktop space comes at a premium, all-in-one printer / scanner / copier / fax / coffee maker / toasters can be an ideal solution for the student, the small business worker or telecommuter. In fact, these do-it-all wonders have gained such traction in the marketplace that you'd be hard pressed to find a single-function consumer inkjet printer outside of the large format or photo enthusiast categories. While single function printers do still exist, they're not as relevant of a product category as they were even a few years ago. After all, if you could get a scanner, copier, fax and printer in a package not much bigger than a single function printer and with a price tag not too far off the mark either, why wouldn't you?

Multi Function Printers (MFPs) are a great solution for dorm rooms or SOHOs. For light-duty copying or for scanning hard copy documents (such as notes) to send via email, they're invaluable.

Many of the solutions in Canada still incorporate a fax component. Curiously, anecdotal industry evidence suggests that Canada is one of very few hold-out markets where fax is concerned. HP, for example, doesn't tend to bother with fax capability in the US market as it's not something that consumers are looking for. Conversely, in Canada fax capability can prove to be a major marketing bullet point and can be a make or break selling feature for some users.

A growing trend in consumer MFPs is wireless connectivity. Several of the MFPs we had in the Lab this month incorporate Wi-Fi as a connection option. This is ideal when desk space is at an absolute premium; once configured, wireless printers can be placed anywhere within range of your home wireless connection without having to string wires. The printer I use at home — the Brother MFC 885CW — sits across the room from my PC, out of the way and not taking up valuable desk real estate.

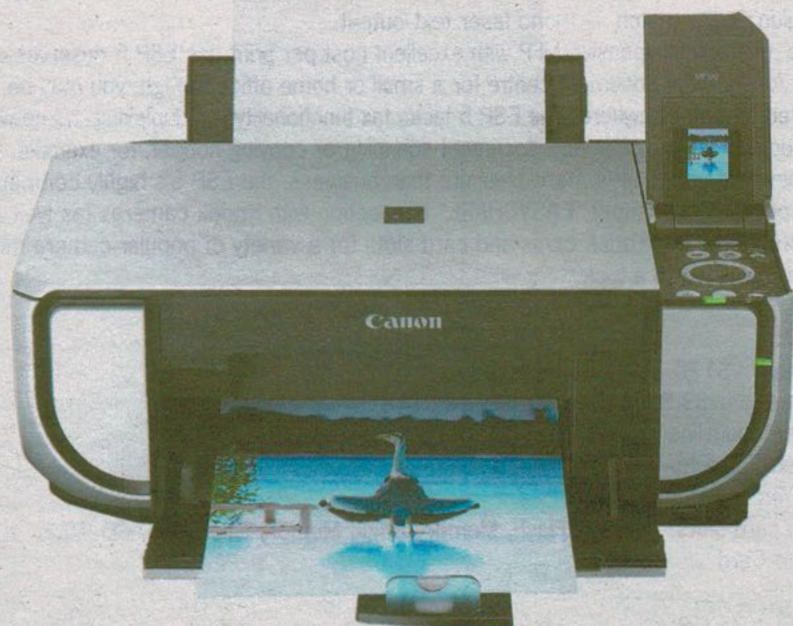
But, without further ado, let's get to the actual testing.

Testing methodology

We performed the testing of all printers in one day. All drivers were loaded onto our test machine and the printers were tested in succession. If during the initial setup the printer asked if we wanted to print a test or configuration page, we did so. Otherwise, we launched straight in to the test printing.

Colour photo printing capability was tested on matte presentation paper using the Photo Printing Wizard within Windows XP to print off a full letter paper sized still life scene. Where available, paper type was selected and "best photo" or a similarly-titled printing mode was chosen. Colour printing was tested using the colour printing test page at nemesis.lonestar.org/site/color_test.html. Monochrome printing was tested using a heavy coverage 10 page specially created for the In the Lab series. We tested the lowest quality "draft," "economy" or "fastest" printing mode on all printers. We also tested the default "normal" or "standard" mode.

Canon Pixma MP520



Epson CX9400Fax

For page per minute (PPM) numbers or time to print results, the stopwatch began when the paper was first taken up by the printer and stopped when the last page dropped into the finishing tray.

Pixma MP520

Canon \$150 www.canon.ca

Dimensions: 45.7 x 37 x 17cm (WxHxD)

Screen: 2-inch colour LCD **Duplex:** Manual

Network: No **Fax:** No **PictBridge:** Yes

Photo card slots: CompactFlash, Memory Stick, Memory Stick Pro, SD, MMC

Print times

Full page colour photo: 2min 39.9s

10pg. mono draft document: 1min 14.5s

10pg. mono normal document: 1min 15.1s

PPM - draft: 8.1 **PPM - normal:** 7.9

While it's not the fastest in its class where printing, scanning or copying speeds are concerned, the Canon Pixma MP520 does have plenty of stand-out points that make it worthy of consideration.

Unique to MFPs in the Lab this month, the MP520 has dual paper feed slots, one rear-mounted and one on the front, below the finishing tray. This allows two different paper stocks to be loaded; high-bond presentation stock in the front for high-quality print jobs and normal bond office inkjet paper in the rear for general purpose printing. These paper trays are user-selectable either with a button on the control panel of the printer or within the software.

Print speeds are nothing to write home about and the MP520 spent the most time "preparing" (spooling) a print, especially apparent in the case of our full-page letter sized photo print where the printer worked for a couple of minutes before starting the actual print, delivered in 2:39.9s from paper take-up to finished print.

Where Canon's entry shines though is in overall print quality. The full-page photo print was the best of the printers tested. It showed a full range of shadow and highlights, was crisp and clean and, over all, an excellent representation of the original still-life scene. The colour printing test table showed accurate results without notable over or under saturation.

Monochrome text was rendered beautifully in normal document mode; crisp, clean and rivaling the output from a mono laser printer. In draft mode, text was still of good quality though noticeably less crisp and bold. In short, while the ink savings may prove worth it when printing documents that won't be circulated outside of the office, the negligible print time savings for the reduced quality print aren't a reasonable trade off.

A small colour LCD panel flips up from the right side of the printer to reveal a spinning jog dial control and numerous buttons. Main menu functions appear in a carousel and can be selected using either the jog dial or cursor keys.

Stylus CX9400Fax

Epson \$130 www.epson.ca

Dimensions: 46 x 40.5 x 23.5cm (WxHxD)

Screen: 2.5-inch colour LCD **Duplex:** No

Network: No **Fax:** Yes **PictBridge:** Yes

Photo card slots: CompactFlash, Memory Stick PRO / Duo, SD, MMC, xD Picture Card

Print times

Full page colour photo: 3min 2s

10pg. mono draft document: 36.8s

10pg. mono normal document: 2min 27.5s

PPM - draft: 16.3 **PPM - normal:** 4.1

The Stylus CX9400Fax is a well-featured MFP with decent — though not stand-out — print times and good print quality in normal mode. Text quality is excellent in Normal mode but dismal in draft. In fact, the draft mode is all but useless. The quality is reminiscent of old dot-matrix printers. It's faint and it looks like every other line is not printed at all. The quality of the full-page photo print was second only to the Canon model tested. That said, it took over three minutes to output the letter-sized colour print.

The front panel of the Stylus CX9400Fax features a 2.5-inch flip-up colour LCD panel for doing minor image editing when printing via PictBridge or from one of the numerous camera card slots. On the front panel, you'll also find the full number pad for faxing along with several different circular direction pads for selecting various options. This makes the menu system a bit confusing.

Like many printers in the Epson line, the Stylus CX9400Fax uses Epson's DURABrite Ultra Ink system. When combined with compatible Epson papers, they promise a light resistance and print longevity of 105 years. We've yet to test this in real-world conditions (if only we could live that long) but it's an impressive print fix spec nonetheless.

Our colour text print document showed some weak colour reproduction in full green and red though, as mentioned previously, the colour photo quality was excellent.

Officejet J6480 All-in-One

HP \$170 www.hp.ca

Dimensions: 47.6 x 47.3 x 25.8cm (WxHxD)

Screen: 2-line mono LCD **Duplex:** Automatic

Network: Wired / Wireless (802.11b/g) **Fax:** Yes **PictBridge:** No

Photo card slots: SD, MMC, CompactFlash Type I and II, xD Picture Card, Memory Stick, Memory Stick PRO

Print times

Full page colour photo: 2min 46.1s

10pg. mono draft document: 36.4s

10pg. mono normal document: 1min 34.8s

PPM - draft: 16.5 **PPM - normal:** 6.2

What it lacks in colour and photo printing capabilities it makes up for in office functionality. In short, if you're looking for an all-in-one that does all of the standard office stuff like faxing, mono and colour presentation style printing, full auto duplexing and the like, cast your eyes this way. If you're looking for an MFP that can do all that as well as print off your vacation photos with a quality rivaling the photo-mat, look elsewhere. The fact that the J6480 rocks the monochrome screen — one

HP Officejet J6480 All-in-One



Kodak ESP 5



of only two printers in the Lab to do so — should be an indication that its expertise lies with business applications as opposed to fun. Our full-page colour photo test rendered decent but not stand-out results. The resulting photo print was a little washed out, lacking in some detail and highlight. That said, our business presentation style colour print came out looking great with deep and bold but not over saturated colours. Monochrome text output was uniformly excellent. Printing mono text at normal quality offered a slow-ish 6.2 ppm but offered laser-quality results. In draft mode, we got a more respectable 16.5 ppm and while the result was more obviously an inkjet print, it would be suitable for non-presentation applications.

ESP 5

Kodak \$170 www.kodak.ca

Dimensions: 42.2 x 29.8 x 17.7cm (WxHxD)

Screen: 3-inch colour LCD **Duplex:** No

Network: No **PictBridge:** Yes **Fax:** No

Photo card slots: SD, Multimedia Card, Memory Stick, Memory Stick Pro, xD Picture Card, CompactFlash

Print times

Full page colour photo: 54.0s

10pg. mono draft document: 55.7s

10pg. mono normal document: 1min 24.7s

PPM - draft: 10.8 **PPM - normal:** 7.1

Kodak's first entry into the MFP market gained attention because of the low cost of ink — about 50 per cent less, on average, than competing products. Our colour test print emerged in 54 seconds but lacked fine detail and highlights. It also showed some banding in uniform colour sections. Our colour business presentation style test showed similar washing out of some saturated colours, notably blues and reds.

Where mono printing is concerned, the ESP 5 output excellent results in normal mode and decent results in draft mode. Its pages per minute count is a reasonable 10.8 in draft and 7.1 in normal mode. In draft, text is light and shows a little misalignment. However, in normal mode it created documents that compared to — but didn't quite match — mono laser text output.

As a relatively inexpensive MFP with excellent cost per print, the ESP 5 deserves a look. As the main document centre for a small or home office though, you may be advised to look elsewhere. The ESP 5 lacks fax functionality; no duplexing, no network connectivity and no sheet-fed document scanning or copying hopper, for example.

However, if your use is more pleasure than business, the ESP 5's highly competitive cost per print and super "EASYSHARE" connection with Kodak cameras (as well as PictBridge for non-Kodak cams and card slots for a variety of popular camera media) make it well worth a look.

X6575

Lexmark \$170 www.lexmark.ca

Dimensions: 33.5 x 44.7 x 20.1cm (WxHxD)

Screen: multi-line mono LCD

Duplex: Full-auto **Network:** Wired / Wireless (802.11b/g/n)

Fax: Yes **PictBridge:** Yes

Photo card slots: CompactFlash, Memory Stick, Memory Stick PRO, SD, MMC, xD Picture Card

Print times

Full page colour photo: 1m 32.0s
 10pg. mono draft document: 43.9s
 10pg. mono normal document: 1m 44.9s
 PPM - draft: 13.7 PPM - normal: 4.1

After a rather drawn-out install process where you have to hit continue through 21 steps ("extend paper tray," "raise paper support," "extend paper guides," "load paper,") you're ready to actually get down to business... And this machine is all business, with 802.11b/g/n and Ethernet networking along with full fax capability, sheet-fed and flat bed scanner and copier along with full automatic duplexing.

While it's not the fastest of the bunch, its 13.7 ppm in draft mode is quite speedy, ripping through our 10-page test document in just under 44 seconds. Our full page colour print emerged in 1m 44.9 sec and while it was sharp and crisp with good highlight range, it had an overly yellow cast. Our colour presentation style document showed excellent colour reproduction with sharp, deep and accurate colours with no over saturation.

In normal mode, our 10-page test document came out crisp and clean with text quality rivaling but not quite matching that of a mono laser printer. In draft mode, some fuzziness appears but documents are still infinitely readable though not quite client ready.

The X6575 is one of only two printers in the Lab to opt for a monochrome as opposed to a colour LCD screen. However, as mono LCDs go, the one that graces the front of the MFP is among the best we've seen. Rather than using a visible dot array for on-screen instructions and notifications, the X6575 has smooth, rounded fonts and has a wide viewing angle, visible whether you're sitting at your desk or standing over the printer.

Conclusion

There's no such thing as the perfect MFP for everybody. If you're likely to do as much or more personal photo printing as business printing, Canon's Pixma MP520 deserves a close look for its excellent print quality. Likewise, the Kodak ESP 5 is

worthy of consideration thanks to its larger-than-average colour LCD screen and its much less expensive than usual consumables, clocking in a full 50 per cent less than competing inks (according to Kodak). For pure business applications, the Lexmark X6575 and HP Officejet J6480 All-in-One are worthy of consideration with their full fax capability, sheet-fed document and fax hopppers and wireless / wired networking capability. Standing high in the middle ground, meeting business needs with an integrated fax, and document feeder, good text quality at normal settings (though not using draft) and its excellent photo printing capabilities, the Epson Stylus CX9400Fax deserves a close look.

In the end, I'll stick with my Brother MFC 885CW with its massive colour LCD screen, PictBridge, wired and wireless connection, numerous card slots, document feeder, fax and, something no other printer has, integrated cordless phone and message centre.

By Andrew Moore-Crispin

Lexmark X6575



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P4 2.6GHZ/1GB/120g = \$160
P4 3GHZ/1GB/320g = \$235
CORE2QUAD 4G-500G COMPLET = \$575
Core2Duo 2G-320G COMPLET = \$389
LAPTOP NEUF-1g-80g-dvdrw 475\$
 Centre de **MACINTOSH** usage
G4 95\$ imac: G3 \$65 www.pc8.ca G4 500\$ G5=\$750
LAPTOP NEUF CORE DUO \$599 2GB/120G/dvdrw
WIRELESS SECURITY CAMERA + RECIEVER TO TV-VCR \$70
 Process. 2,4GHZ = \$25- LCD \$60+
MB Carte mère 478 Intel+2.4ghz = \$69

LAPTOPS WWW.PC1.CA
P4-PM-centrino = \$290 → \$400
P2(WIFI) = \$99 PIII-WIFI = \$175
DVDRW = \$75 160GB = \$75 60G \$45
DVD-CDRW \$45 TV TUNER \$40 WIFI \$20

BIG CHOICE MACINTOSH + LAPTOPS
2xG5 4xG5 www.PC8.ca PowerBOOK-ibook
P3 600-1Ghz COMPLET = \$30-\$45
P3 256-20-40G COMPLET \$45
 GRANDE SELECTION PIECES NEUF /USAGE
 ROUT. WIFI \$29 C.WIFI 20\$ C.RES=5\$ C. fax \$5 DVD \$10
 Quality C.MERE: **CORE2QUAD=80\$ CORE2DUO=60\$**
DDR2 2G 45\$ 1G=25\$ DDR1 512M \$28 SDR 256M = \$15
H.D: 20g=15\$ 40G=\$25 120G=40\$ USB 8G 40\$ 4G 20\$
160G=\$48- 250G=55\$- 320G=68\$- 500G= 90\$ P.sup=10\$
DVDRW 29\$ WEBCAM 15\$ 120G=45\$ 250G=\$60
Carte VIDEO: 256M=\$50 512mb=\$80 1g=\$110
 Watch your Home/business From Any Where by
 internet :- Surveillance P4 **DVR SYSTEM**
 server **RECORDING** from 16
 entre video and 4 audio input **\$290**
CARTE DVR 16CAM 150\$ CAMERA SECURETE 75\$
 Tel: 514 703 9528 - **www.pc1.ca** - 514 585 7473
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Hours: Monday - Friday: 9am - 6pm
Saturday & Sundays: Closed

Compact Business System



3.0Ghz Core2Duo™
A super fast computer perfect for everyday business applications complete with Microsoft's XP operating system.

- ✓ 3Ghz e8400 1333FSB CPU
- ✓ Windows XP Professional
- ✓ 22" Viewsonic monitor
- ✓ Nzxt Apollo gamer cahse
- ✓ Asus 650i mainboard
- ✓ Logitech 2.1 Speakers

\$839⁰⁰

What's Included?

Intel e8400 Core2Duo™ 3.00Ghz processor • Intel DG31 mainboard • 2048mb 800Mhz DDR2 memory • Seagate 250gb SATA3 drive • Intel X3100 graphics • Space saving micro tower chassis • 350 watt power supply • 20 inch Acer wide screen display • DVD ReWriter • Keyboard and optical mouse • Logitech compact speaker system • Two year parts and labour warranty • Microsoft Windows XP Professional operating system
Package as listed (#Q64275) **\$839.00**

Super Affordable Core2Duo™ System

You don't have to spend a lot to get a new Intel Core2Duo powered computer system with the latest 45nm technology.

Super Small Tower

\$599⁰⁰

What's Included?

Intel e7200 Core2Duo™ 2.53Ghz 1066Mhz FSB processor • Intel G31 chipset mainboard • 512mb DDR2 667Mhz memory • Seagate 160gb SATA3 drive • Intel X3100 HD graphics controller • Micro tower chassis with up front audio and USB ports • Acer 17 inch 1440x900 resolution LCD display • DVD ReWriter • Logitech keyboard • Logitech optical mouse • Your choice of Microsoft XP Home or Vista Basic edition operating systems
Package as listed (#Q64279) **\$599.00**



nVidia GTX260 GAMERS SYSTEM

Latest GTX260 Card!

Use the included monitor or plug it into your HDMI TV for that "big screen" experience!

- ✓ Intel Q9450 Quad Core
- ✓ Windows Vista Premium
- ✓ 22" Viewsonic monitor
- ✓ Nzxt Apollo gamer cahse
- ✓ Asus 650i mainboard
- ✓ Logitech 2.1 Speakers

\$1665⁰⁰

What's Included?

Intel Q9450 Core2Quad™ 2.66Ghz processor • Asus P5N-E-SLI mainboard with SLI support • 4096mb 800Mhz DDR2 memory • Seagate 500gb SATA3 drive • nVidia GTX260 896mb graphics • Nzxt LED lit gamers tower • 22 inch Viewsonic VX gamers display • DVD ReWriter • Keyboard and optical mouse • Microsoft Windows Vista Premium operating system • Logitech speaker system with twin satellites and sub-woofer • Two year parts and labour warranty
Package as listed (#Q63133) **\$1665.00**



45nm Technology

"GREEN" PC

Using a bookshelf sized chassis with no cooling fans and environmentally friendly low wattage power supply, this system not only saves you money but helps the environment.

\$239⁰⁰

What's Included?

Intel Celeron 420 processor • Asus P5VD2 mainboard • 512mb DDR2 memory • Seagate 80gb hard drive • Intergrate business graphics • Small footprint chassis with 300 power supply • 52X CD writer with software
Package as listed (#Q63569) **\$259.00**

LASER PRINTERS

SAMSUNG	
ML2010r (printer/20ppm/1200dpi)	124 ⁹⁵
ML2571n (printer/25ppm/1200dpi/lan)	141 ⁹⁵
ML3051n (printer/28ppm/1200dpi/lan)	162 ⁹⁵
CLP300 (colour/17ppm/600dpi)	153 ⁹⁵
SCX-4521f (laser,printer,fax,copy)	190 ⁹⁵
CLX2160 (colour/printer/scanner copier/camera direct printing feature)	269 ⁹⁵
HEWLETT PACKARD	
P1505 (b&w/24ppm/1200 dpi)	118 ⁹⁵
P1505n (lan/b&w/24ppm/1200 dpi)	185 ⁹⁵
3050 (b&w laser,scanner,copier)	300 ⁹⁵
P2015 (b&w/27ppm/1200 dpi)	226 ⁹⁵
CP1215 (colour/12ppm/600 dpi)	188 ⁹⁵
CP1515n (lan/colour/12ppm/600 dpi)	272 ⁹⁵
3600n (lan/colour/17 ppm/600dpi)	334 ⁹⁵
2840 (colour laser,scanner,copier, fax)	578 ⁹⁵

POCKET DRIVES

FreeAgent Go
by Seagate

- ✓ Auto Backup software
- ✓ Fits in your shirt pocket
- ✓ Powered by USB ports
- ✓ For Mac or Windows systems
- ✓ Great for backing up notebooks

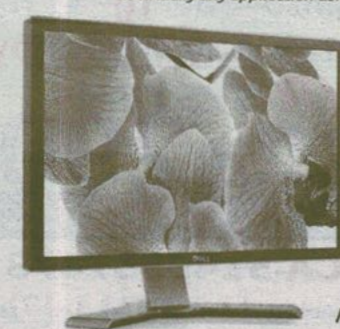
80GB (SE-ST900803FGA1)	74 ⁹⁵
160GB (SE-ST901603FGA1)	99 ⁹⁵
250GB (SE-ST902503FGA1)	124 ⁹⁵

POCKET TECH

HP Ipaq 510 (QB Phone/Mobile 6)	240 ⁹⁵
HP Ipaq 110 (Pocket PC/Wifi)	274 ⁹⁵
HP 310 (3.5" Pocket GPS System)	327 ⁹⁵
HP Enterprise 210 (Pocket PC/Wifi/M6)	362 ⁹⁵
ASUS R300 (3.5" GPS Multimedia System)	159 ⁹⁵
ASUS P527 (QB Phone/Wifi/GPS/Mobile 6)	569 ⁹⁵
Palm Z22 (Pocket Organizer)	109 ⁹⁵
Palm E2 (Pocket Organizer)	194 ⁹⁵
Palm TX (Pocket Organizer/Wifi/Bluetooth)	287 ⁹⁵
TomTom One (3.3" Pocket GPS System)	177 ⁹⁵
TomTom XL330s (4.3" Pocket GPS System)	268 ⁹⁵

PRO Displays

Dell's lineup of professional photo and video editing displays offer excellent performance for a reasonable price. With resolutions upto 2560 x 1600, these displays fit virtually any application demands.



24" Size
\$599⁰⁰

Model 2408WFP
(1920 x 1200)

30" Size
\$1999⁰⁰

Model 3008WFP
(2560 x 1600)

Backed by Dell's
Full Service Warranty

Gamers Core2Quad™ Crossfire Bundle

featuring dual ATI 4850 625Mhz video cards



- ✓ Designed for gaming enthusiasts
- ✓ 512mb video memory per card
- ✓ Viewsonic 22" Xtreme gaming monitor
- ✓ Intel Core2Quad 9450 45nm processor
- ✓ Antec Three Hundred gamers tower
- ✓ Heavy duty 650 watt power supply

FEATURES AND SPECIFICATIONS

- Intel Core2Quad™ Q9450 45mb processor
- Asus P45 ATI Crossfire motherboard
- 4GB of Kingston 800Mhz DDR2 memory
- 500GB Seagate "Enterprise" drive
- Dual ATI HD4850 512mb video cards
- Antec Three Hundred gamers chassis
- Antec 650 watt TruePower supply
- Viewsonic VX2240w gaming LCD monitor
- Antec 650 watt power supply
- 20x DVD writer with lightscribe
- Logitech keyboard bundle with optical mouse
- Microsoft Vista Premium edition



\$1759

System #Q64257

Notebooks - Notebooks - Notebooks

ASUS Core2Duo™ Montevina Platform

Featuring Intel's new P8400 Core2Duo processor with 1066FSB
Bring Asus's new F8VA with you and enjoy revolutionary entertainment on the go. Intel's "Montevina" Core2Duo™ processor technology combined with a built-in ATI HD3650 1GB graphic card make this portable solution as powerful as most desktop systems.



- Intel P8400 2.26Ghz processor
- 4096mb 667Mhz DDR2 memory
- Microsoft Vista premium edition
- 14" Wide ColourShine display for inside and outside use
- 250gb 5,400 rpm hard drive
- 802.11n wireless networking
- ATI HD3650 1024mb video
- Built-in Gigabit LAN controller
- Dual layer DVD-RW super drive
- Scratch resistant finish
- Two year global warranty

\$1280⁹⁵

Model:AS-F8VA-B1
Bonus: includes mouse and case



Built-In Adjustable Webcam

Asus 2kg Powerful Ultralite

Intel T7500 2.2Ghz Core2Duo™ processor, 1048mb, 160gb SATA drive, 13.3" wide display, nVidia 8400, Windows Vista Business edition, Lightscribe DVD writer, AS-W7S-B2B **\$1271.95**

Asus Business PC

Intel Core2Duo™ T5550 processor, 3GB memory, 250gb hard drive, 14" wide display, ATI HD2400 video, Vista Business edition, DVD writer, case, mouse AS-F8P-C1B **\$1129.95**

Lenovo Speed Machine

Intel T7300 2.80Ghz Core2Duo™ processor, 1048mb, 160gb SATA drive, 15.4" wide display, nVidia 7300 video, Windows Vista Business edition, DVD writer LE-0769ABU **\$1262.95**

Acer Celeron Dual Core

Intel 1.7Ghz processor, 2048mb, 160gb hard drive, 15" wide screen 1280x800 display, Intel X3100 video, Windows Vista Premium edition, DVD writer AC-AS5315-2187 **\$543.95**

Lenovo Business PC

Intel 1.5Ghz dual-core processor, 1048mb, 120gb hard drive, 15.4" wide display, Intel X3100 video, Windows XP Professional, DVD writer LE-0769AUU **\$703.95**

Fujitsu Well Equipped

AMD 2.0Ghz processor, 2048mb, 160gb hard drive, 15.4" wide display, ATI 1150 video, Windows Vista Premium edition, Built-in Firewire, DVD writer FU-A1130-FPCR32 **\$732.95**

Acer Dual-Core Notebook

Intel Core2Duo™ 1.7Ghz processor, 1024mb, 120gb hard drive, 15.4" wide display, Intel 950 video, Windows Vista Premium edition, DVD writer AC-AS5610-2312 **\$711.95**

Asus G2S Gamers Unit

Intel T7700 2.4Ghz Core2Duo™ CPU, 3072mb, 200gb SATA drive, 17" wide display, nVidia 8600GT, Windows Vista Premium edition, Dual-Layer DVD writer AS-G2S-B2 **\$1936.95**

Fujitsu Notebook/Tablet

Intel I7500 1Ghz Core2Duo™ mobile processor, 1048mb, 80gb drive, 12.1" touchscreen, Intel X3100 video, Windows Vista Business edition FU-T-010-B30001 **\$1485.95**

SERVERS

Rackmount 2U Core2Duo™

Server with 320GB Storage

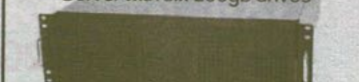


Package as listed
\$679⁰⁰
#Q61133

- ✓ Intel Core2Duo e4600
- ✓ 1GB DDR2 ECC memory
- ✓ Intel server motherboard
- ✓ Twin 160gb Seagate drives
- ✓ 4 x 3.5" & 1 x 5.25" bays
- ✓ Built-in Gigabit networking
- ✓ CD-ROM & Floppy drives
- ✓ Intel onboard RAID 0/1/5/10
- ✓ Two year warranty

Multi-RAID 3U Core2Quad™

Server with six 250gb drives

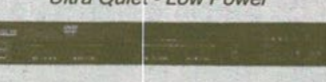


- ✓ Six Seagate 250GB ES drives pre-configured in RAID 1 & 10
- ✓ Eight hot swap drive bays
- ✓ Intel Q9450 quad core cpu
- ✓ Intel 3210 server motherboard
- ✓ 4GB 800mhz ECC memory
- ✓ Adaptec RAID controller
- ✓ Multiple expansion slots
- ✓ Built-in DVD/CD writer
- ✓ Dual Gigabit networking ports
- ✓ 4 USB 2.0 ports, 2 PS2 ports
- ✓ Two year warranty

Package as listed (#Q64114) **\$2329⁰⁰**

Rackmount 1U RAID-1

Ultra Quiet - Low Power



Package as listed
\$949⁰⁰
#Q64062

- ✓ Intel Pentium-D processor
- ✓ 1GB dual channel memory
- ✓ Asus server motherboard
- ✓ Dual 160gb Seagate drives
- ✓ Built-in DVD/CD writer
- ✓ PCI Express expansion slot
- ✓ Dual gigabit network ports
- ✓ Onboard HD graphics
- ✓ Two year warranty

GREY-TECH EXTERNAL HARD DRIVES



Our new **MINI LINE** units come with Seagate 3.5" SATA drives in a premium solid aluminum enclosure. With triple interfaces (eSATA, USB 2.0, and Firewire 400), these units work with both MAC's and PC's. They are stackable and can be daisy chained using the dual Firewire ports. Interface cables and power adapter included.

The new PC powered portable **MICRO LINE** can fit in your pocket and includes both USB 2.0 and Firewire interfaces.

500GB (#GT-MINI0500PRO2)	139 ⁹⁵	160GB (#GT-MICROU160) *USB only	84 ⁹⁵
750GB (#GT-MINI0750PRO2)	184 ⁹⁵	160GB Pocket Size (#GT-MICRO160)	114 ⁹⁵
1000GB (#GT-MINI1000PRO)	249 ⁹⁵	250GB Pocket Size (#GT-MICRO250)	139 ⁹⁵

- Custom made systems available
- Corporate purchase orders welcome
- Prices already cash discounted. Credit cards subject to surcharge
- Prices subject to change without notice
- All products come with full warranty
- We ship insured across Canada
- Order online at www.greytech.com

DVD DUPLICATORS

Push a button and make upto 11 copies of a DVD or CD automatically. Top quality Athena controller allows writing at upto 18x on DVD media.

- ✓ Full self-contained design
- ✓ Uses Pioneer 115 drives
- ✓ Upto 20x DVD burning
- ✓ 64mb built-in cache
- ✓ Supports dual layer
- ✓ One year warranty

Current Models

3-Target Ped (#Q60456)	399 ⁰⁰
5-Target Ped (#Q57097)	459 ⁰⁰
7-Target Ped (#Q65616)	529 ⁰⁰
9-Target Ped (#Q65617)	619 ⁰⁰
6-Target Rack (#Q61349)	629 ⁰⁰
11-Target Ped (#Q59198)	689 ⁰⁰

Hard Drive Option

Store complete images of your DVD's with the optional 80GB hard drive add-in kit... **\$60.00**

Our 19th Year!

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Markham, Ontario L3R 6A8

Phone: (800) 811-1425

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www.greytech.com

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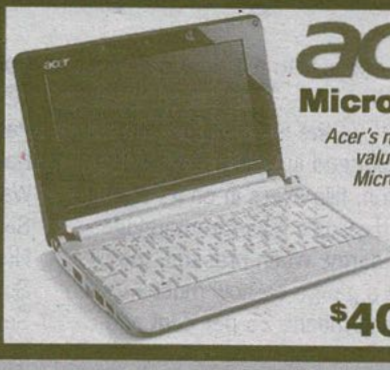
Saturday & Sundays: Closed

Seagate FreeAgent^{PRO} External Hard Disk Drives

Seagate's line of FreeAgent^{PRO} external triple interface hard drives offer great protection against system failures, virus attacks, or hard disk failures. Simply plug it in and your ready to go! Includes eSATA, USB, and Firewire interfaces. Automatic backup software for Windows included.

500GB Drive Kit 160⁹⁵
750GB Drive Kit 214⁹⁵
1000GB Drive Kit 279⁹⁵

(Search for "FreeAgent" on our website)



acer ONE Micro notebook with XP

Acer's new AspireOne notebook offers incredible value in a ultra small package powered by Microsoft's Windows XP operating system

- Includes Microsoft Windows
- Includes Microsoft Works
- 120GB hard drive built-in
- 8.9" wide screen display
- Only 2.8lbs with battery
- 1024mb memory built-in
- USB 2.0 ports, audio ports
- External monitor port
- Includes McAfee Security

\$401⁹⁵

FUJITSU ScanSnap S5xx Document Storage System

The Fujitsu ScanSnap S5xx bridges the paper and digital worlds allowing fast and flexible capture of paper-based information into high quality PDF image files. ScanSnap is compact and powerful, a complete 'out of the box' solution for managing your documents. The scanner comes bundled with full featured software giving you the ability to archive, search, edit and share your documents and business cards.



Windows Complete Kit
PA03360-B512.....440⁹⁵

Apple OS X Complete Kit
PA03360-B615.....440⁹⁵

- Super Fast... Scans up to 18 double sided pages per minute
- Portable with optional case
- Compact attractive design
- Built-in document feeder
- Includes Adobe Acrobat
- Simple to use

intel PROCESSORS AMD

LCD TELEVISIONS

VIEWSONIC NX1932W 19" TV, 720p support
1440x900 res. ATSC tuner 312⁹⁵
VIEWSONIC NX2232W 22" TV, 720p support
1680x1050 res. ATSC tuner 384⁹⁵
SAMSUNG 225ms 22" TV, 720p support
1680x1050 res. No tuner 376⁹⁵
VIEWSONIC N2635W 26" TV, 720p support
1366x768 res. ATSC tuner 566⁹⁵
VIEWSONIC N3235W 32" TV, 720p support
1366x768 res. ATSC tuner 667⁹⁵
VIEWSONIC N3735W 37" TV, 720p support
1366x768 res. ATSC tuner, DNX 868⁹⁵
VIEWSONIC N4285P 42" TV, 1080p support
1920x1080 res. ATSC tuner 1226⁹⁵
VIEWSONIC N4785P 47" TV, 1080p support
1920x1080 res. ATSC tuner 1468⁹⁵

NETWORKING

WIRELESS ROUTERS/AP
TP-Link Wireless Router WR624g (G108) 36⁹⁵
TP-Link Wireless Router WR941nd (N300) 59⁹⁵
Dlink Wireless Router DIR-615 (N300) 69⁹⁵
Trendnet Wireless Router 631brp (N300) 89⁹⁵
Linksys Wireless Router WRT160N (N300) 86⁹⁵
Linksys Wireless Router WRT300N (N300) 111⁹⁵
Asus Wireless Router WL-500w (N300) 121⁹⁵

WIRELESS ADAPTERS

TP-Link Wireless PCI Card WN651g (G108) 24⁹⁵
TP-Link Wireless USB WN620g (G108) 24⁹⁵
TP-Link Wireless USB WN821n (N300) 33⁹⁵
TP-Link Wireless PCI Card WN851n (N300) 34⁹⁵
Trendnet Wireless PCI Card 423pi (G54) 27⁹⁵
Trendnet Wireless USB 424ub (G54) 27⁹⁵
Trendnet Wireless USB 624ub (N300) 63⁹⁵
Linksys Wireless USB WUSB54G (G54) 58⁹⁵
Linksys Wireless USB WUSB300N (N300) 75⁹⁵
Trendnet Wireless PCI Card 623pi (N300) 63⁹⁵
Dlink Wireless PCI Card DWA-542 (N300) 69⁹⁵
Dlink Wireless USB DWA-142 (N300) 69⁹⁵
Dlink Wireless Cardbus Extreme DWA-652 (N300) 77⁹⁵

WIRED ADAPTERS

Trendnet 10/100/1000 Card TEG-PC1TXR (PCI) 17⁹⁵

Intel 10/100/1000 Card Pro1000 (PCI) 37⁹⁵

SWITCHES

Trendnet Switch 8port 10/100/1000 TEG-S8 49⁹⁵
Dlink Switch 8port 10/100/1000 DGS-1008D 61⁹⁵
Trendnet Switch 16port 10/100/1000 TEG-S160TX 182⁹⁵
Trendnet Switch 24port 10/100/1000 TEG-S240TX 233⁹⁵
Dlink Switch 16port 10/100/1000 DGS-1016D 178⁹⁵
Dlink Switch 24port 10/100/1000 DGS-1024D 254⁹⁵

CAPTURE CARDS

PowerColor RA330 Tuner with remote, PCI 28⁹⁵
HAUPPAUGE 150 for Vista, PCI 65⁹⁵
HAUPPAUGE HVR-950 ATSC HD, USB 79⁹⁵
ADS DVD Express DX2 USB transfer kit, Create DVD's from multiple sources including VHS tapes/camcorders 85⁹⁵

Hauppauge!



HD PVR

\$234⁹⁵

H1-1212

Record HD shows from cable or satellite receivers

The Hauppauge HD PVR 1212 is the world's first High-Definition video recorder for making real-time recordings from cable TV and satellite set top boxes. A built-in IR blaster can automatically change TV channels for scheduled recordings. Keep movies on your computer or burn them to DVD's for HD playback on BluRay players. Computer kit with software included.

Antec Sonata³

Extreme Quiet! Antec's Sonata³ is one of the quietest cases around and includes their 500 watt high-efficiency power supply!

- 120mm Cooling Fan Included
- Upfront USB, Audio, & eSata ports
- Hi-gloss, built-in dust filter

\$132⁹⁵



SYSTEM CASES

Nspire Economy (with 350 watts) 42⁹⁵
GreyTech CSA Tower (n/p 120mm fan) 37⁹⁵
InWin MCE Desktop (300w) 74⁹⁵
Antec Sonata III (w/500 watts, USB) 132⁹⁵
NZXT Apollo (n/p 120mm led lighting) 89⁹⁵
NZXT Lexa (n/p 120mm led lighting) 117⁹⁵
Antec Fusion Media Center kit with 430 watt power, display, & IR receiver, Super quiet! 180⁹⁵
P182 Aluminum mid tower n/p 150⁹⁵
Thermaltake Aquila Tower (n/p) 130⁹⁵
Thermaltake Mozart Low Profile for M/C 218⁹⁵

Antec 300

Antec's new 300 tower offers lots of expansion room and great built-in cooling in a very affordable stylish mid-tower chassis design.

- Top mounted 140mm cooling fan
- Two front USB & audio ports
- SLI/Crossfire Compatible

\$56⁹⁵



ViewSonic 28" Gaming Monitor

- 1920x1200 Resolution
- Multiple Input Ports
- HDCP Content Compatible
- Real 800:1 Contrast Ratio
- Built-in Amplifier
- Three Year Warranty
- Built-in Speakers
- 3ms Response Time

Amplifies your desktop experience

\$610⁹⁵

Shop online at
www.greytech.com

VIDEO CARDS

ASUS
8600GT 540mhz Silent 512^{mb} 109⁹⁵
9600GT 650mhz 512^{mb}, 2xDVI, PCIE 163⁹⁵
9600GT 650mhz 512^{mb}, Silent 2xDVI 169⁹⁵
4850 625mhz DDR3 512^{mb}, 2xDVI 214⁹⁵
4870 750mhz DDR3 512^{mb} 305⁹⁵
GTX260/280 896^{mb}/1024^{mb} 322⁹⁵/494⁰⁰
BFG
9600GT 675mhz OC 512^{mb}, 2xDVI 178⁹⁵
GTX260/280 896^{mb}/1024^{mb} 314⁹⁵/454⁰⁰
SAPPHIRE
X2400PRO 256^{mb}, hdmi 39⁰⁰
X2600PRO 512^{mb}, hdmi 69⁰⁰
X2600XT 256^{mb}, hdmi 79⁰⁰
3870 DDR4 512^{mb}, hdmi 147⁰⁰
4850 625mhz DDR3 512^{mb}, 2xDVI 189⁹⁵
4870 750mhz DDR3 512^{mb}, 2xDVI 294⁹⁵
Pallit
8500GT 400mhz 512^{mb}, DVI, PCIE 67⁹⁵
8600GT 600mhz 1024^{mb}, DVI/HDMI, PCIE 89⁹⁵
9600GT 700mhz 512^{mb}/1024^{mb}, HDMI 159⁹⁵/175⁹⁵
9800GT 675mhz 512^{mb}, 2xDVI/HDMI, PCIE 260⁹⁵
4850 625mhz DDR3 512^{mb}, 2xDVI 199⁹⁵
4870 750mhz DDR3 512^{mb}, 2xDVI 304⁹⁵

MATROX Triple-Head-2GO

Connect three DVI monitors to your single port video card. Great for finance or gaming 303⁹⁵

PROJECTORS

ACER
X1160 DLP Business Unit 800x600 448⁹⁵
VIEWSONIC
PJ551D DLP Business Unit 1024x768 540⁹⁵
MITSUBISHI
HC1500 DLP Home Theatre 1280x720 1066⁹⁵
HC4900 DLP Home Theatre 1920x1080 2119⁹⁵
BENQ
W500 LCD Home Theatre 1280x720 866⁹⁵

DVD / CD CASES

Jewel Case Single Acrylic 29⁰⁰
Pack of 50 11⁰⁰, 100 22⁰⁰, 200 40⁰⁰
Vinyl Case Single C-Shell 25⁰⁰
Pack of 50 11⁰⁰, 100 20⁰⁰, 200 38⁰⁰
Jewel Case Single Acrylic (Slim) 20⁰⁰
Pack of 50 8⁰⁰, 100 16⁰⁰, 200 28⁰⁰
Jewel Case Double Acrylic 35⁰⁰
Pack of 50 13⁰⁰, 100 25⁰⁰, 200 44⁰⁰
DVD Case SINGLE Vinyl (Slim) 25⁰⁰
Pack of 50 9⁰⁰, 100 16⁰⁰, 200 28⁰⁰
DVD Case Single Vinyl 25⁰⁰
Pack of 50 9⁰⁰, 100 16⁰⁰, 200 28⁰⁰
DVD Case DOUBLE Vinyl 25⁰⁰
Pack of 50 9⁰⁰, 100 16⁰⁰, 200 28⁰⁰
DVD Case for 4 DVD's - Vinyl 69⁰⁰
DVD Case for 5 DVD's - Vinyl 75⁰⁰
DVD Case for 6 DVD's - Vinyl 79⁰⁰
DVD Case for 8 DVD's - Vinyl 89⁰⁰

CD and DVD Media

Save on DVD and CD media when your purchase in quantity

Ritek DVD Media

DVD-R 16x 50 pack \$12⁹⁵, 200 pack \$48⁰⁰
DVD-R 8x white inkjet printable to hub surface 50 pack \$12⁹⁵, 200 pack \$50⁰⁰
DVD-DL 4x white printable 25 pack \$44⁹⁵

Ritek CD-R Media

Ritek 700mb 50 pack \$11⁴⁵, 200 pack \$42⁰⁰
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Glossy Photo Surface 50 pack \$16⁹⁵, 200 pack \$64⁰⁰

Harnessing the Sun

Solar solutions put through their paces

Long has humankind wished to harness the power of the sun. Thanks to green being the new buzzword and given that we're carrying more personal devices than ever before, gathering, storing and using solar power on a small, personal scale is now a reality.

We got our hands on a couple of entries from the major players in this niche market, a Voltaic backpack embedded with a solar panel array at the back and the original Solio with its three solar panels that fan out from the teardrop-shaped device.

Both of these personal solar chargers can not only directly charge devices using the power of the sun, they can also store a small amount of energy in an on-board battery to charge up your devices at night such as when camping, biking or hiking or just running around doing errands in the city. Each has its own unique benefits and detriments but, all told, both are quite effective at doing what they're designed to do: harvesting energy from the sun to keep your gadgets off the grid and to give them a boost when they need it the most.

Solio

\$100 www.solio.com

Package includes:

USB port replicator tip,
Mini-USB tip,
Nokia tip,
Sony Ericsson tip,
Samsung tip, LG tip,
USB charging cable,
Window suction cup

The Solio's three panels fan out windmill-style, making the 121 x 60 x 35mm (WxHxD, closed dimensions) charger easy to pack up and carry along. The Solio can be charged from the wall (charger not included) or a USB port and promises a full charge in six hours. Charging a device that exists for the express purpose of charging other devices seems to defeat the purpose somewhat, though it could be useful when you want to carry a full charge before heading out on a camping trip, for example. Solio promises a full charge in eight to 10 hours in direct sunlight.

The device has a small hole that can fit a standard pencil to prop the leaves up when on the ground, perfect for leaving the Solio at base camp while out hiking or exploring. This hole can also be used to tie the Solio onto a backpack, hook it onto a tent pole or hang from a tree. The retail package also includes a small suction cup that fits snugly into the hole so the Solio can be stuck on to a car, home or office window that's getting sunlight. We had trouble getting the Solio to charge through the window of the office despite the fact that it was in direct sunlight, perhaps due to some kind of coating on the glass. At home, charging in the window wasn't a problem.

In the package are a series of adaptor tips for popular makes and models of cell phones and other devices. Other tips can be purchased from the Solio site for about \$10 each.

A small rubber cover seals off two ports; one for power in and one for power out. A mini-jack sized adaptor cable plugs in to the Solio and accepts

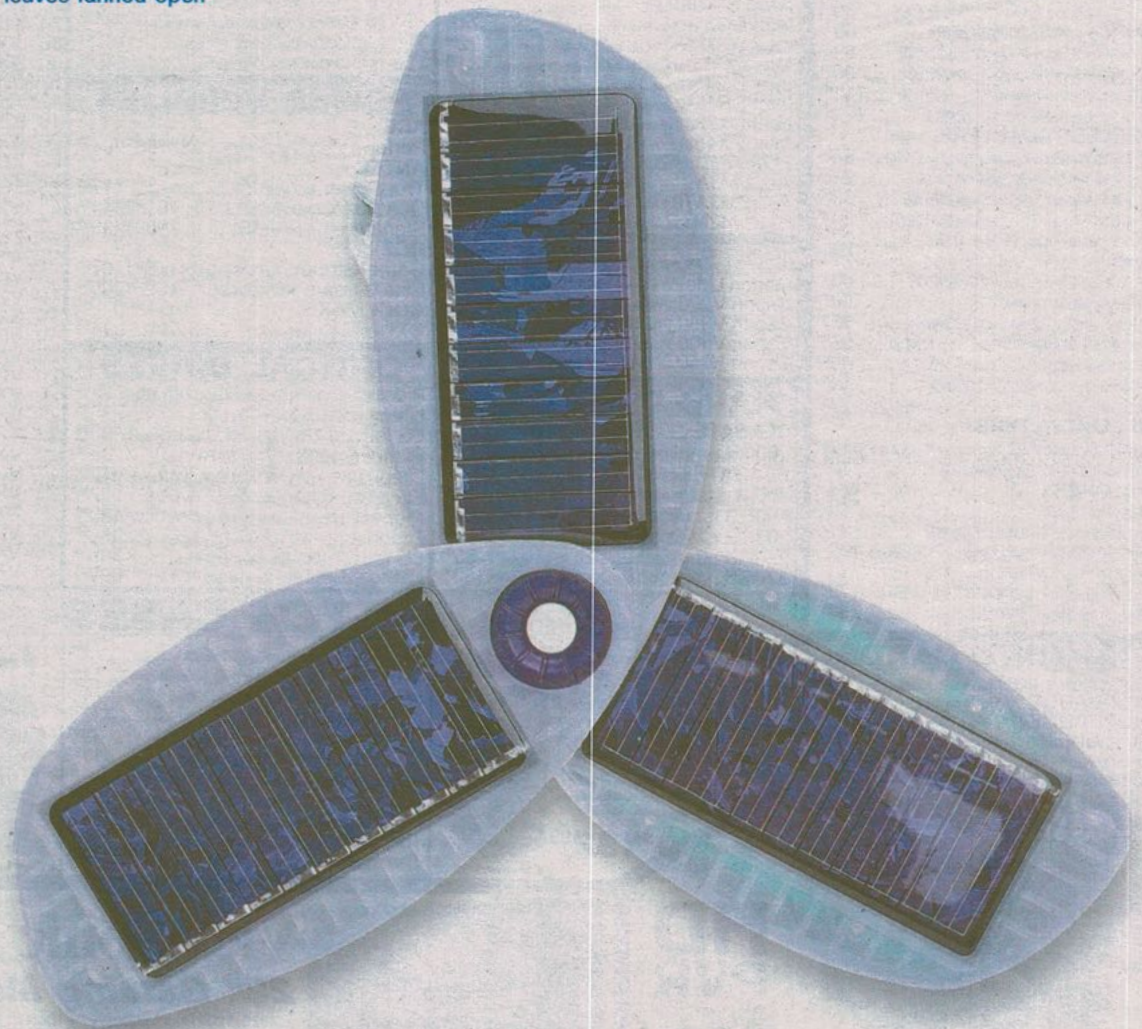
adaptor tips which in turn connect to the device being charged.

A small button on the back of the Solio sends the juice to the device that's plugged in and, using LEDs within the translucent button, fills users in on its status. Red means it's collecting the sun's rays (or charging via USB) and storing the energy. When pressed, the LED flashes green to give a gauge on how much power is available. One flash means 25 per cent and four means fully charged.

In our tests, the Solio charged up fully after a full day in the light streaming through a skylight, getting direct sunlight for much of the afternoon.

Once the internal battery was full, it charged a BlackBerry 8800 battery (RIM battery model number C-S2) once fully in about three hours. After charging, the LED indicator light on the Solio showed 25 per cent or less of its charge remaining. It couldn't manage another partial charge; while the charging lamp on the BlackBerry did light for a little while, upon turning it on again, it displayed a "battery drained, shutting down" notification.

Solio with solar charging leaves fanned open



Voltaic Daypack

\$240 www.voltaic.com

Package includes:

Battery pack,
Wall charger,
Six multi-function tips including USB,
Nokia tip,
Sony Ericsson tip (large form factor),
Sony Ericsson tip (small form factor)
Samsung tip,
Mini USB (BlackBerry, etc.) tip, Country adapters for wall charger,
Car cigarette lighter socket

Voltaic has perhaps the most intriguing line of solar solutions available. Its high-quality flexible solar panels are worked into briefcases, backpacks and messenger bags made of recycled PET bottles. It's a fun and fashion-forward statement. The three large solar panels of the Voltaic Daypack are not removable — at least, not practically so. All the requisite wiring throughout the bag is present and accounted for upon opening the packaging, minimizing setup on the user side. All you

Voltaic Daypack



have to do is plug in the battery pack — removable and tucked away immediately behind the solar panels in one of the bag's two main compartments, strap it on your back and hit the road on a sunny day to get things going.

It's functionally impossible to determine exactly how long it takes to charge the battery pack to full; differing sun conditions and myriad factors offer too many variables. Voltaic puts the number at between eight and 10 hours in direct sunlight.

The Li-Ion battery pack has three LEDs to indicate charge strength, activated by pushing the test button. It also has two LED lights mounted front and centre which can apparently run for 55 hours on a full charge. Atop the pack is a voltage switch to go between 3.5V, 5V and 7.2V. If your device doesn't work on one of these voltages, it's time to break out the car charger (if you have it) to plug directly into the female socket thoughtfully included in the bag. It's not the most elegant solution, but it is effective in a pinch.

A full day in the sun streaming through a skylight in the office (moved every hour or so to keep pace with the moving patch of sunlight) fully charged the battery pack. In turn, the pack fully charged the BlackBerry 8800 battery (RIM battery model C-S2) tested in about two hours and then charged the same battery model from dead to about 60 per cent in an hour and 10 minutes before it ran out of juice entirely. Not bad.

As a daypack, the Voltaic is quite comfortable. It's not much use as a camping or hiking backpack owing to its small dimensions. However, for the urban warrior, it's perfect. A laptop sleeve inside protects your notebook (though the pack can't charge laptops) and all the requisite pockets, clips and the like are present and accounted for, including a cell phone pouch on the left shoulder strap. A wire runs to this cell phone pouch and it can be used to charge your handset (or any other device) as you go. Neat touch.

By Andrew Moore-Crispin

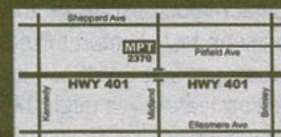
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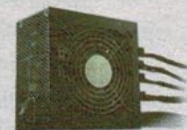


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An End to Card Clutter?

Device helps to sort contact information for users and businesses

CardScan Personal

CardScan

www.cardscan.com \$179.99 115x80mm (WxD)

In an era of information overload, managing contact info can be difficult. Memorizing phone numbers is a thing of the past, possibly because there are so many types of numbers to memorize — from home, to business, to cell phone or even fax — or because there are so many people to keep in touch with these days. And besides just the phone numbers, there are also the e-mail addresses, websites and other information to worry about. With each business you come into contact with having their own website, and each person from that business having their own e-mail, it gets somewhat difficult to keep track of it all. Of course, that's why these businesses and employees have business cards.

While easy to lose, business cards provide invaluable information that would come in handy — if only you could find your collection of cards.

But that's why, in these troubled times of contact management, products like CardScan are available.

CardScan allows businesses or individuals to digitally store the information found on business cards in an easy to access database, thereby allowing them to throw the business cards into a drawer or even through the shredder afterwards. This may sound like a dangerous practice — discarding valuable and tangible contact info in exchange for a digital file that could easily be lost, compromised or corrupted — but with the easy-to-use CardScan layout and its numerous backup features, it might be time to round up all those stray business cards lingering around and get rid of them. After scanning them and saving them into your collection, of course.

The CardScan device comes in a variety of forms ranging from CardScan Personal, which is the smallest and most affordable of the products and is aimed at independent users, to CardScan Team, which is more of an integrated office solution for large groups of

employees. The device we tested was the CardScan Personal, ideal for individual employees of a business, those who are self-employed, or those who deal with large numbers of people (with business cards) on a regular basis and want to sort past and present contacts.

The product itself is fairly small, roughly 115 x 80mm (WxD), and is easily portable thanks to the handy travel bag that comes with it.

When I first received the device, I thought that it might be battery-operated, with its own memory bank, allowing for business types to give me their cards so I could quickly scan and return them. Not so, apparently. The device is powered completely by USB and has no internal storage, so it is essentially just a very specialized scanner.

Don't let that detract from the value of CardScan, however, because what it does, it does extremely well.

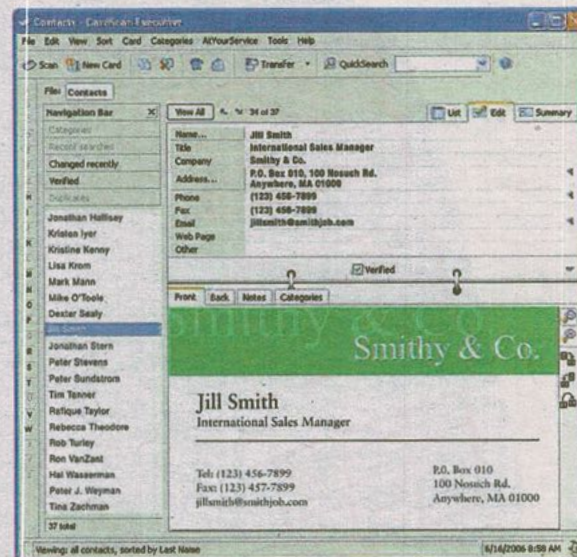
How it works

After installing the software, a process that took less than 10 minutes, the CardScan should be ready to plug in. There is an arrow that is back-lit in blue on the inside the front card feed slot. This changes to orange once a card is detected or is being scanned.

Scanning time is advertised to be less than five seconds but that doesn't include data processing. In our tests, a single side of a card could be scanned and processed in about 15 seconds.

The Card Scan does optical character recognition (OCR) to convert printed text into data that can be manipulated. It's not perfectly accurate, but it's usually close. Some business card fonts or symbols may not be recognized, but standard fonts and letters are input without a problem, generally in the field that they belong to as well.

Business cards of a more digital nature such as Virtual Card File (VCF) attachments in email, can be easily highlighted and dragged over the CardScan interface.



Business card management software included with the CardScan Personal

Keeping things accurate

While any information scanned does go into the database and get sorted alphabetically (or in any other way you prefer), each new addition is assigned a verification rating once scanned. Every item will start off as unverified, and it will be up to the user to check each piece of information before checking off the "Verified" button, which will take away the dark question mark beside the entry. If there is no question mark, that will mean that the information within is to be taken as fact, so be alert when checking information just in case any additional info needed to be added. Also, the opacity of the question mark indicates how much verification is required. A dark question mark will mean that the CardScan may have had a hard time reading the card, or much of the information was missing, whereas a grey question mark may just mean that the verification checkbox still needs to be ticked, but that the information is more or less accurate.

The contact information in the database can also be exported to a variety of handheld devices and cell phones.

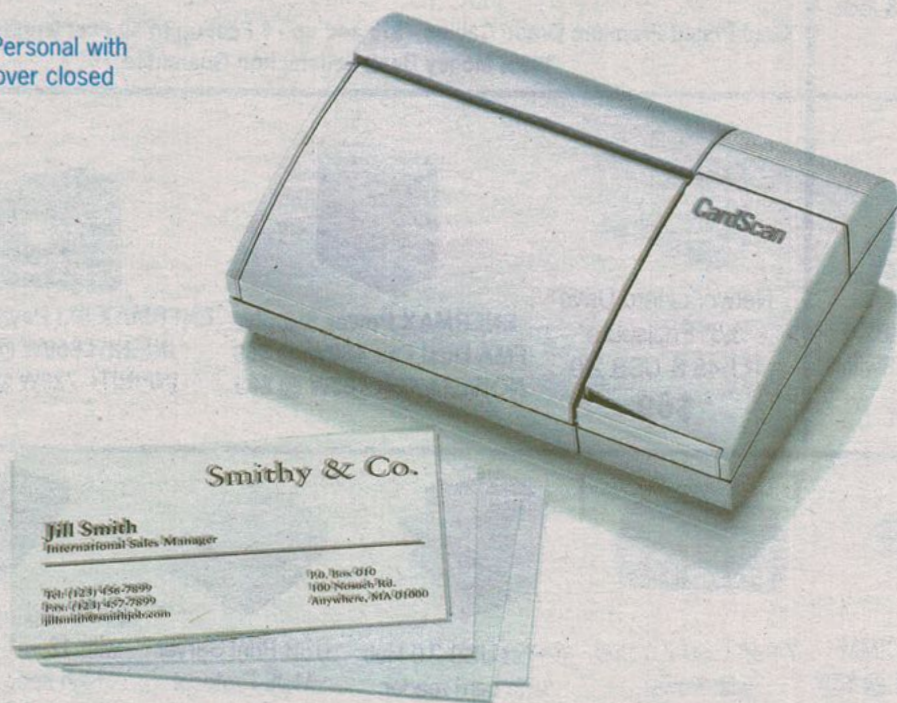
Keep it secret, keep it safe

CardScan also offers to back up your contact lists for free online using At Your Service. The secure backup site, run and operated by CardScan, is simple, easy to use, and free. It's an ideal way of maintaining access to contact lists in the event that you want to travel light and don't have the option of using a PDA or smartphone. Plus it can check for updates for your contacts, making sure that all of your contact information is accurate and up to date.

The CardScan software is loaded with features from "one-click" e-mail, which makes it easy to mass e-mail select contacts, to labelling and printing options allowing you to print out contact labels or replacement cards, making this much more than a simple card scanning product.

By Dorian Nicholson

CardScan Personal with scanning cover closed





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Don't Go Dry on Your Own Supplies

Using the gear you already have to make your own business stationary

What do you do when you run out of business cards or letterhead? If you start with a call to your local print shop, think again. Armed with only Microsoft Word, a decent printer and some paper, you can easily create your own business stationery and brochures. Everything from letterhead to business cards to invoices can be created in Microsoft Word. Better still, you only print what you use so there's no waste.

Grab your logo

The first step in creating your own documents is to get your images where you need them. These are your logo and any other images you typically use for your stationery and flyers. I like to add them to my clipart gallery so they are accessible from any Office program. To do this, choose Insert > Picture > Clip Art and click the Organize Clips option in the task pane. Choose File > Add Clips to Organizer > On My Own and browse to find the images to add. Select an image and click Add.

Repeat for all your images.

When you see the images in your Clip Organizer, right click each in turn and choose Edit Keywords. You'll see a list of keywords and you can click in the keyword list and add your own. Add words like your company name or logo and, after typing each keyword click Add to add it. Delete any keywords that don't apply to the image — for example, folder details will have been imported as keywords. Click OK when you are done. In future, choose Insert > Picture > Clip Art, type the word to search for, ensure the Search In option includes My Collections and your images will appear in the task pane and you can quickly and easily insert one into your document by clicking on it.

Create a letterhead

To create your letterhead first rough out a design on a sheet of paper so you know what it should look like. Then assemble the pieces in Microsoft Word into a new document. You can, for

example, create a letterhead with elements such as images and drawing objects as well as text. Place these elements inside the Header area by choosing View > Header and Footer so they are on the Header and Footer layer and so they won't get in the way later on. If you put large images or text at the top or bottom of the page, adjust the header and footer margins in the Ruler (display it by choosing View > Ruler) so the page content is kept well away from the header and footer text and so it doesn't overlap it.

Choose a font for the text elements in your letterhead which is different from the font that you plan to use in your letters. This way the two text elements will look separate and distinct.

Once you have created your letterhead save it as a template by choosing File > Save As. From the Save As Type dropdown list select Document Template (*.dot) and type a name for the letterhead that describes its purpose. Click Save and then close the document — do not work on the version you just created. Instead, to create a letter in future, choose File > New and select the Templates: On My Computer option in the task pane. Locate and click the template you just created, and click OK to open it. You can now type and save your letter without damaging the original template. When you create a letter using a template document, you only print the stationary that you need when you need it, and you can print blank copies anytime you need those too.

Business cards

To create business cards, first purchase the perforated business card paper stock you intend to print onto. Then choose Tools > Letters and Mailings > Envelopes and Labels and select the Labels tab. Click Options and locate the label number for the business card paper stock you have purchased. If you are using metric sizes, from the Label Products dropdown list choose Avery A4 and A5 sizes, otherwise use Avery Standard.

If you can't find the exact paper dimensions, select the nearest arrangement and choose Details and configure the design to match the stock that you have in hand. Click OK when you are done and click New Document to add the empty layout table into the document — each cell is one business card. Create the first business card by typing the business card details into the cell and add your logo. When the first business card is complete, select the

table cell contents and choose Edit > Copy and then click in the cell to its right and choose Edit > Paste. Select both completed cells and copy and paste them to fill the document. Save the document and print a copy onto plain paper to check it will print correctly onto your stock paper. When you're satisfied everything is properly lined up, print the cards.

When you create and print your own business cards, you can print them as and when you need them and, if your details change, you won't waste any.

Other business documents

Microsoft Office Online is a useful repository of business documents you can customize for your own purposes. To find these, choose File > New > and from the Templates area choose Templates On Office Online. Select the Template category you're interested in, for example brochures and preview brochures that have been created by other Word users and companies specializing in business documents. Each has a rating beside it so you can determine which are of the best quality. Select a template to use and click Download to download it to Word.

If you plan to use the document a lot, first replace the basic elements such as your logo, business name, address and colours, and then save the design as a template on your own computer. Close it and then create a new document based on this template each time you need a new brochure. There are a range of document templates for most business uses on the Microsoft Office site and most are compatible with older versions of Word so it's a good starting point for customizing your own designs.

With a little planning and creativity you can create most of your business documents using Microsoft Word, some paper supplies and your printer. You'll never run out of stock and you'll always have just what you need on hand.

By Helen Bradley

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Chief of the Board

Gigabyte X48T-DQ6 has a lot to love

Gigabyte X48T-DQ6

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It's hard to write a review when the product you're reviewing has very few, mostly negligible flaws. The Gigabyte X48T-DQ6 is further proof that the saying, "you get what you pay for" can be entirely correct — it's a little more expensive than the average motherboard, but it's unquestionably a premium product.

Based on Intel's current flagship chipset, Gigabyte's X48T-DQ6 shares many features with its X48-based siblings, the X48-DS5 and X48-DQ6. Aside from a few tiny improvements, the major difference with the X48T-DQ6 lies in its support for blazing-fast, soon-to-be-standard DDR3 memory. Not only does this make the X48T-DQ6 a more future proof product, but also gives it more performance potential as well. In the land of the hardcore hardware enthusiast and power-hungry PC user, this reason alone is more than worth the cost of entry. The rest of us, however, need a little more convincing. Fortunately the X48T-DQ6 is stacked, coming with a slew of features and offering a higher build quality than any other motherboard I've seen.

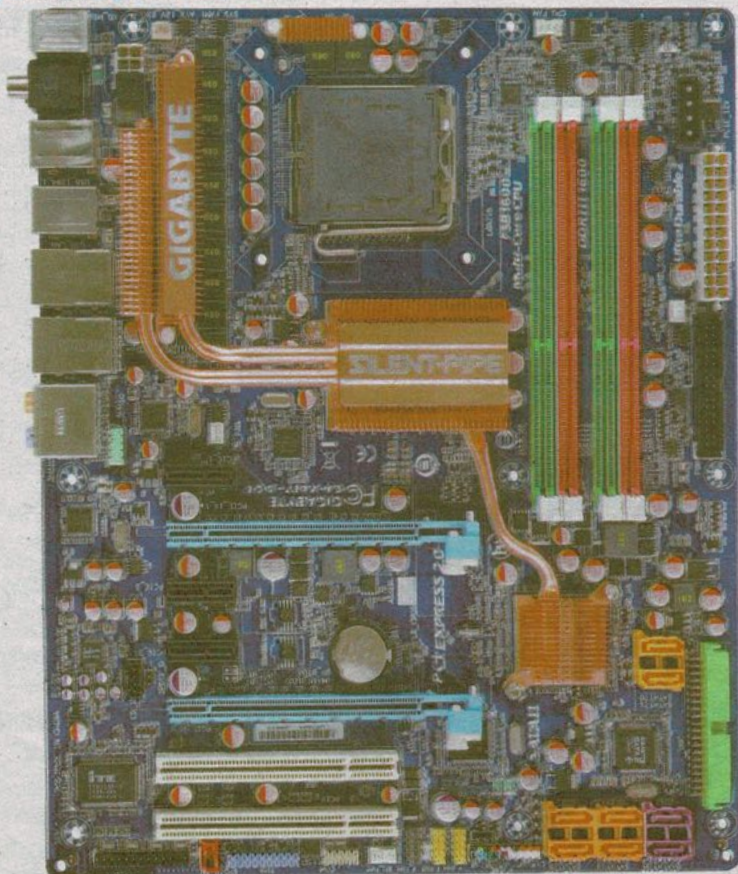
Where's the sink?

The list of features for the X48T-DQ6 is long, so bear with me. The Q6 in "DQ6" is actually an acronym used to label six areas of the motherboard that have four ("Q"uad) layers of redundancy or expansion. The most obvious of these features are the Quad DDR3 slots, Quad e-SATA2 ports for external HDDs, and the motherboard's optimization for Quad-core processors. Not so obvious are the Quad Cooling, Quad Triple Phase power design, and Quad BIOS.

Quad Cooling is arguably one of the coolest aspects of the motherboard (pardon the pun). The X48T-DQ6 has passive heat-pipe cooling — dubbed "Silent Pipe" — on both the north and south bridge like most motherboards. Additionally, there are heatsinks on the power MOSFETs as well as the new "Crazy Cool" cooling system designed to cool the underside of the CPU. Gigabyte (and the laws of physics) are quick to mention that this added cooling will improve the lifespan of the components, while increasing stability at stock speeds or overclocked.

While it might not be as cool as Quad Cooling, the Quad BIOS allows for worry-free BIOS updates and tweaking. Using Gigabyte's DualBIOS (two physical BIOS chips on the motherboard) along with Express BIOS Rescue Technology (to store copies of the BIOS in flash memory, the HDD, or CD) gives the X48T-DQ6 a seemingly bullet-proof BIOS backup system. Along with having a primary and secondary BIOS chip, you can

Gigabyte X48T-DQ6 motherboard



save the BIOS data in multiple locations in case you ever need to restore either of the DualBIOS chips. This is a godsend for overclockers and a safety net for newer computer users.

The X48T-DQ6 also has 2-Gigabit Ethernet with both fault tolerance and receiver side scaling. Like the dual-phone line "Shotgun" technology of yore, 2Gbit Ethernet uses Teaming in order to simultaneously run two RJ-45 Gigabit connections as one, effectively doubling throughput. It's clever and undoubtedly gives you a network speed advantage, however, the real world boost may not be significant since most home users have yet to max out at the standard 1Gbit/s.

Other unique features of the Gigabyte's top-tier motherboards are the Ultra-Durable 2 manufacturing process and Dynamic Energy Saver software. Ultra Durable 2 uses better cooling and components on the board to ensure more stable operation and increase the lifespan of the hardware. Dynamic Energy Saver is similar to laptop throttling, essentially cutting back on power when the system is idle and giving you the right amount of juice if you need the additional power. The combination of Ultra Durable 2 and Dynamic Energy Saver (DES) is where the real magic is; not only are all the components more efficient and cooler in their own right, but when used in conjunction with Gigabyte's DES, the difference in power consumption and operating temperature is substantial.

The onboard audio is controlled by the ALC889A with DTS Connect. By offering 7.1 + 2 channel audio and supporting the latest audio formats for Blu-Ray (and HD-DVD) playback, the ALC889A is arguably the most capable integrated audio solution available. Moreover, it works magnificently well when connected to an external audio receiver. The two additional channels are used to stream a separate stereo channel to another set of speakers... I can't think of a practical purpose for this functionality, but it's there in case you ever need it.

A dose of reality

With all those features and all that praise, you may be left with the impression that the X48T-DQ6 is a quintessential, must-have motherboard. However, like all things, it's not perfect. For example there is no built-in Wi-Fi. The fact that this is a performance motherboard and Wi-Fi can't reach the speeds of most wired connections (never mind the X48T-DQ6's 2Gbit Ethernet), the reason for the exclusion is understandable. That said, it still would have been nice to see some kind of built-in wireless interconnectivity.

Similarly annoying is that even though the X48T-DQ6 supports ATI's multiple graphics card CrossFireX standard, nVidia has not allowed Intel to use their SLI technology in chipsets (including the X48 Express). While this is due to Intel/nVidia and not Gigabyte, the fact remains that you will not officially be able to run two nVidia cards in tandem. The only scenario where this could really be a problem is if you've already got the two nVidia video cards or if you explicitly plan on using SLI.

Again, both of these omissions are only minor annoyances, but not having to worry about either Wi-Fi or SLI support would have inched this motherboard that much closer to perfect... And after testing the 9800GX2 (nVidia) recently, I really wanted to partner-up a pair of them in the X48T-DQ6 just to see how fast the system could be pushed.

Conclusion

To think that the lack of built-in Wi-Fi and SLI-support are X48T-DQ6's biggest weaknesses when neither of those two functions can be found on the vast majority of motherboards is a testament to the X48T-DQ6's excellence. With Ultra Durable 2 design, the coolest operating temperatures around, and using the highest quality power components ensures that the X48T-DQ6 will last for years to come in even the most strenuous conditions.

Supporting DDR3 and 45nm processors, while being optimized for both Windows Vista and quad-core CPUs, the X48T-DQ6 has more future proofing than you could hope for, while pushing the current performance envelope. This is the best motherboard I've used so far this year and, unless Intel's forthcoming chipset blows the X48 Express out of the water (unlikely), the X48T-DQ6 could very easily end up being my favourite motherboard of 2008.

By Mike Palermo

Game Gear Pt. 3: Joysticks, Gamepads and Steering Wheels

Hands on with a dying breed

Logitech ChillStream



Welcome to the third and final installment of our look at gaming-oriented hardware. Previously, we chose Saitek's Cyborg and Microsoft's Recluse as this year's hottest gaming keyboards. We had a tougher time in the following month in selecting the world's top gaming mouse, but ultimately anointed Logitech's feature-filled G9 and Microsoft's comfy Habu as the best of an impressive lot. But as cool as gaming keyboards and mice might be, neither are mandatory pieces of gear. Gamers who frequent the type of games where keyboards and mice play a key role can quite comfortably get by with standard, all-purpose units.

However, some games require controllers that are specifically built for play. This is the realm of joysticks, gamepads, and steering wheels — joysticks for flying and driving, gamepads for sports, and steering wheels (obviously) for driving. Granted, casual players can make do with a keyboard and mouse for just about anything, but those who want to excel — especially in the world of hardcore flight and racing simulations where smooth, exacting control is mandatory — know the advantages of a good stick or wheel far outshine the cost. And as for sports, well, let's just say that nothing beats a good gamepad.

Out of style

'Tis sad but true. Joysticks, as a whole, aren't as plentiful or as innovative as they used to be. That's not to say there aren't solid sticks out there, but the build quality at the high end of the curve, the originality, and the overall selection generally aren't what they once were. And why is that? Because, in the heyday of the venerable joystick — the late 1990s — the PC reigned supreme as the gaming platform of choice. Thusly, there were more games in general, and definitely more that appealed to flying and racing simulation addicts —

the type of player that preferred a realistic rather than "arcade" experience and knew he needed a top grade stick to be successful.

Does that mean you should entertain the idea of buying an old school stick via the used market? Probably not. Many now-antiquated units may have been robust and, in some cases, downright beautiful, but they simply won't work — at least not without a lot of hassle — on a modern PC. Back then, sticks plugged into the computer via an interface called a

gameport. Today, all peripherals of this ilk connect via USB. Though gameport-to-USB adapters exist, they aren't always reliable. Moreover, Microsoft's latest operating system, Vista, doesn't support gameport-based devices at all.

But don't worry too much. Truth is that because of the dearth of recent joystick innovation, many of today's sticks are tried and true oldies but goldies that in some cases have simply been mildly tweaked and updated from gameport to USB connectivity. Still, we bemoan the loss of true greats such as Logitech's early WingMan and Microsoft's SideWinder Precision models, if only for the sake of nostalgia.

Tools of the trade

Before you buy, you should determine the features you need. If, for example, you intend to use your stick primarily for flying, and especially if you play realistic simulations rather than quick-action arcade games, you'll want to consider a unit with a twist-action handle for easy, analog control of your aircraft's rudder. You'll likely also want some form of onboard throttle — which usually appears as a sliding or pivoting lever — so you don't need to resort to your keyboard's number keys to adjust your airspeed. Four-way and eight-way "hats," generally located near the top of the handle, are equally nifty tools for looking to your left and right or above while you're in the cockpit.

More buttons are always a good thing for those who want to launch lots of weapons or tinker with lots of aircraft controls, merely because pressing a button that's right there under your finger is far easier than taking your eyes from the screen to hunt and peck on the keyboard. And if you really want to experience the physical sensation of flying a plane or racing a car,



you'll want your stick to be equipped with a force feedback motor for vibration to translate tactile effects such as g-forces, gun blasts, and crashes.

Our top joystick pick may seem a bit surprising because it doesn't feature a twist-handle throttle or force feedback, doesn't look particularly flashy, and is, in all honesty, quite expensive. Nevertheless, CH Products' Fighterstick (www.chproducts.com, ~\$150) rules the skies in terms of reliability and construction, and features enough controls and programmability for even the busiest pilot.

Like many of CH Products' wares, the Fighterstick was originally released in the 1990s and has remained essentially unchanged since then. The unit sports three pushbuttons, one trigger, a "mode" button, three four-way switches, one eight-way switch, a rotary throttle wheel, and more. But the real secret to the Fighterstick's golden reputation lies under the surface. Here, you'll find industrial-strength parts and a build quality that's unrivaled in the retail marketplace. Stories abound of players logging thousands of hours with their Fighterstick, experiencing nary a hiccup along the way. Furthermore, the unit is deadly accurate.

CH Products builds numerous other game controllers, including standalone throttles, flight yokes, alternative sticks, and a nifty set of rudder pedals that lock in place to double as gas and brake in racing games. All are critically praised.



Saitek X52

CH Product's Fighterstick



Thrifty but nifty

If your wallet sprouts legs and runs off at the mere suggestion of dropping more than a hundred bucks on a joystick, there are numerous less pricey options. One of the best is Saitek's Cyborg Evo (www.saitekusa.com, \$50), a feature-laden device that's ambidextrously designed so it suits both lefties and righties and sports an adjustable hand rest to ensure people with small hands can play as easily as those with monster mitts. The Evo has all the tools and controls to get the job done, including a twist handle and a thorough software package. Other Evo models include the Evo Force Feedback and the Evo Wireless.

One of the companies at the forefront of the high-end joystick surge in the late 1990s was California's Logitech. Indeed, some of Logitech's decade-old models were true works of art. But they were darned expensive too. Today, we like Logitech's Freedom 2.4 Cordless Joystick (www.logitech.com, \$60) for its abundance of controls and reliable cord-free operation, and the Force 3D Pro (\$55) because it does everything the Freedom 2.4 does in a wired configuration but with the addition of a responsive force feedback motor.

King of the hill

True diehard fighter pilots with bucks to burn may want to up the ante considerably with Saitek's killer X52 HOTAS (Hands On Throttle and Stick) system. Essentially a joystick on steroids for the right hand and a ridiculously programmable throttle control for the left (complete with illuminated façade for night flying), the X52 does everything any pilot could ever want except force feedback, and it does it with style. This is the cat's meow for flight controls, as it should be at its price (\$150 - \$220).

Steering Wheels

"Steering wheels" and "racing wheels" are misnomers really, because any racing setup worth its salt includes a pedal set for the floor too. That aside, there's one thing to remember when researching: don't be cheap. Yes, you can buy inexpensive wheel and pedal units,



but in the long run, you don't want to. There are simply too many physical forces at work when you tug at that wheel and hammer at those pedals to put your faith in a bargain basement model. You'd be better off with a good joystick.

That said, there's nothing in the least wrong with our pick for the best wheel currently in mass-market circulation. It's the Logitech G25 Racing Wheel, and it's wonderful. It looks cool, it feels great, it adapts to any player's preference, and it will make you a better racer. A three-part proposition — wheel, shifter, and pedals — the G25 features a comfortably leather-wrapped steering wheel and two hair-trigger F1-style shifting levers. It has none of the steering jitters of other mass-market units, and it rotates as little as 40 or as much as 900 degrees. Its two force feedback motors are shockingly powerful, its standalone gearshift offers sequential and six-speed shifting and a whopping twelve programmable buttons, and the mostly-metal

Logitech G25 System steering wheel



pedal unit works and stays in place better than anything else out there. The price: a similarly whopping \$200 - \$300.

Set your sights a bit lower and Logitech's MOMO Racing Force Feedback Wheel (\$100) should do you fine. The unit features six programmable buttons, a sturdy desktop clamping system, and credible force feedback. Virtually anything else in this price range or below is not recommended.

However, serious drivers do owe it to themselves to at least explore high-priced alternatives such as the excellent Thomas Super Wheel driving system (www.thomas-superwheel.com, \$300-plus) and Virtual Performance Parts' awesome, all-metal VPP Racing Wheel (www.virtualperformanceparts.com/english/produkte.php, \$600-plus). Be careful at the VPP site — you may want to buy an entire cockpit.

Gamepads

Microsoft, which entered the gaming market in the 1990s long after virtually everyone else, then ramped up its presence in the hardware realm with an uneven selection of joysticks, wheels, and gamepads, has recently scaled back in a big way. As of this writing, the only controllers currently being produced for the Microsoft menu are gamepads — the Xbox 360 Controller for Windows (www.gamesforwindows.com, \$45) and the Wireless Xbox 360 Controller for Windows (\$55).

Both have been wildly successful. Why? Because players can use the Xbox 360 Controller for both PC and Xbox 360 gaming. Nice bit of marketing and design magic, no? Thankfully, they're also solid units with just about every feature and creature comfort any gamer could desire. Force feedback? Check. Comfortable ergonomics? Check. Tons of buttons and controls (including two analog mini-joysticks, a directional pad, four thumb buttons, and another four triggers)? Check. An onboard headset jack? Check. You can drop a few extra dollars on the cordless version if you want — though some gamers swear the response of a corded controller is faster and the connection

Logitech G25 System gear shifter component



more reliable — but both models are at the top of the gamepad heap.

That's not to say other gamepads should be written off. Far from it. Logitech, for example, offers the RumblePad 2, the sibling of the very successful Rumblepad. It sports all the features of the Microsoft offering, but a slightly different layout (the two analog sticks are right up front) and a reduced price point (\$35). Also from Logitech hails the ChillStream (\$35), a



Logitech G25 System pedal array component

gamepad that bears a startling resemblance to the Microsoft design but isn't quite as rounded and smooth. Yet the ChillStream's big claim to fame is its built-in cooling fan — to keep your perspiration-laden hands comfy during lengthy gaming sessions. Only the extremely sweaty need apply.

If you don't need vibration feedback and you have no preference for wired versus wireless, you can count on spending even less. Saitek's P990 Dual Analog Pad (\$30), for instance, is not only similarly equipped to all the above pads but also features a special button to automatically reprogram its controls to those used in most first-person shooter games.

Whatever your eventual decision, remember that a pad without dual analog sticks and at least two analog triggers and four buttons likely won't cut the mustard in many of today's top titles.

By Gord Goble

Tech Training in Quebec

Name	Phone	Address	City
Aba Telecom Inc	450-437-5599	260 Ch De La Grande-Cote A	Rosemere
Academie De Formation Infrmtq	418-626-2344	777 Boul Lebourgneuf 220	Quebec
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Accesmultimedia	514-324-3244	10861 Boul Pie-lx	Montreal-Nord
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Alliance Form Estrie Inc	819-829-9119	359 Rue King E 210	Sherbrooke
Arci	418-542-6457	2510 Rue Des Merles	Jonquiere
Boutik Informa	819-824-3926	856 3E Av	Val-D'Or
Canada Cad	450-973-1223	800 Boul Chomedey	Laval
Cdi College	514-849-1234	416 Boul De Maisonneuve O 700	Montreal
Centraces Formation	819-824-8884	888 3E Av 107	Val-D'Or
Centre D'Affaires Micro	819-727-1795	221 3E Rue E	Amos
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Milinformatique	450-471-7444	637 Rue De Valencay	Lachenaie
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Tyark College Inc	514-747-2161	2155 Rue Guy	Montreal

Power Pellets: Games Geared to Do Good

So-called "serious games" are out to change the way you think about global issues

The video games most of us are familiar with are typically designed with the sole purpose of entertaining. With rare exceptions, such as the recent *Metal Gear Solid 4: Guns of the Patriots*, which delivers a commentary on privately-funded militaries and the consequences of war-based economies, the vast majority of commercial games amuse without distilling any useful insights about us, our culture, or the world in general.

However, there is a growing movement of so-called "serious games" that have as their aim the dissemination of political ideas. Usually free, these PC-based titles are made by activists, charitable organizations, lobby groups, governments, and individuals interested in distributing important concepts and information across the Internet by novel means.

The diversity of serious games is impressive.

Real Lives (www.educationalsimulations.com) allows players to simulate a life from birth to death in one of 190 countries around the world. As your character ages, he or she will endure issues relevant to his or her region. Someone growing up in Burma, for example, might contract hookworms, be drafted into the military, or forced to work a menial job, whereas people born in an affluent western country will typically face less worrisome medical problems and have the opportunity to begin better paying careers.

I Can End Deportation (a.k.a. ICED — www.icedgame.com) is designed to educate people about problems surrounding American immigration. It places the player in the shoes of a well-meaning immigrant who, despite spending his or her time paying taxes, donating blood, and giving money to homeless citizens, is just one misdeed away from being detained and deported. Various bits of information, such as the fact that immigrants can serve in the US military but can't vote, pop up throughout the game.

Impact Games' *The Peace Maker* (www.peacemakergame.com/) gives players the power to make decisions necessary to bring peace to the Middle East. BBC Science & Nature's *Climate Challenge* (www.bbc.co.uk/sn/) is an infuriatingly difficult exercise in managing the policies, resources, and diplomatic relations of the European Nations as they relate to reducing carbon emissions. *Darfur is Dying*

(www.darfurisdying.com/), winner of a contest that tasked conscientious programmers to create a game about the Darfur genocide, provides players with a glimpse of what it's like to be a Darfuri refugee foraging for water and facing such dangers as being kidnapped and either recruited or raped by Janjaweed militias.

Indeed, if there's a cause, chances are a game has been made in support of it.

However, the question of whether a game can be an effective means of communicating important ideas remains. Are people interested in learning something while they play? Are these games capable of keeping their players' interest long

enough to deliver their messages? Would you want to play a game that has been explicitly designed with no way to win, as is the case in many of these games?

Medium aside, who plays serious games? ICED was developed in conjunction with New York teachers, community organizations, and students, but will its unconcealed political agenda keep it from finding its way into classrooms and other environments capable of delivering it to the people it was designed to influence? A quarter of a million people have downloaded *Real Lives*, but are these the sort of people who could do with a lesson in global injustice, or do they already understand the inequities of birthplace?

Put plainly, are serious games preaching to the converted? It's impossible to measure tangibly their impact on public opinion, especially since they often rely heavily on the Internet's viral nature for their distribution.

However, while the efficacy of games designed to promote political causes is still unknown, they do prove at least one thing: There are game designers out there with ambitions to use the software they create to say something meaningful. And, from my perspective, that's just one more step for games in their march to gain recognition as a legitimate art.

The Political Machine 2008

Reviewed on: Windows PC (Windows Vista; 3.0 GHz Intel Dual Core processor; 2GB of RAM; 512MB ATI Radeon X1900 XT graphics card; displayed at 1440 x 900 on a Dell 2407FPW 24-inch LCD.)

Score: 3.5/5

As Canadians without the power to determine the next American president, many of us observe US politics as though it were a game. As it happens, that's the perfect attitude to carry into Stardock's *The Political Machine 2008*, a sequel to the four-year-old original that adds, among other things, fresh new candidates in the form of Barack Obama, Hillary Clinton, and John McCain.

For those who missed the first *Political Machine*, it put players in the shoes of a presidential candidate who spends 41 weeks zooming around the country giving speeches, wheeling and dealing with PR specialists and spin doctors, and setting up local and national ads. Once a player's money or stamina ran out his turn would end and play would pass to an opponent who would promptly perform some political manoeuvring of her own.

The new game doesn't mess with this formula too much. The same basic turn-driven play returns, and with a few exceptions, such as new outreach centres that help drum up support wherever you build them, most campaign decisions are similar to those we were tasked to make before.

That said, there are some key changes that make the sequel well worth its modest \$20 price tag. For starters, the new edition makes players take stands on current issues, such as rising gas prices, the collapsing housing market, and the war in Iraq. It also bases play on real world demographics and exit poll figures from all 50 states. Plus, it lets players guest on fake versions of real shows, like the *Covert Report* and the *O'Malley Factor*, includes an impressive candidate creator, and even offers a few fantasy scenarios, such as an election that takes place on an evil alien world.

What's more, the graphics have been given a minor overhaul. Candidate caricatures have been replaced with shiny bobbleheads (perhaps an indication of what the game's designers think of their real-life counterparts?), and the old 2D map has been swapped out for a more polished, 3D board that proves much easier on the eyes over the course of a ten-month campaign.

It's not a sequel so much as an upgrade, but that shouldn't stop political junkies who'd love to prove that America would be better off if the reins were in their hands.

By Chad Sapienza



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The Last Byte

Greening the home office



The soaring price of gasoline provides yet another benefit to working from home part or all of the time. But if you work at home remember that the cost of running an office, which might otherwise be paid for by your employer,

now comes out of your pocket. A few extra devices might not seem like a big deal, but why not keep as much of your money as you can. There are some simple things you can do to reduce your energy bill and have a greener home office at the same time.

Let's start with something we all have: the AC/DC adapters for notebook computers and other electronics devices. What we commonly refer to as power bricks have been ID'd as big time energy robbers by many organizations in many countries. While plugged in, power bricks may be drawing power even when they are not powering the device they were intended for, and are thus responsible for what are known as phantom or ghost loads that drive up our utility bill without providing any benefit. Each brick may not be sipping much, but how many do you have floating around your house? I was surprised to count more than a dozen that we regularly use around our house for cellular and cordless landline phones, external drives, notebook computers, scanners, PDAs, rechargeable battery chargers, Internet access points, routers, USB hubs, and the sort.

The US-based Electrical Power Research Institute estimates that there are six to 10 billion AC/DC adapters in use around the world. It says the best units are up to 90 per cent efficient, but some can be as low as 20 per cent efficient. The institute estimates that power adapters are responsible for needlessly consuming around two per cent of the energy produced in the United States, and better efficiency could save around \$3 billion US and reduce carbon

dioxide emissions by 24 million tons per year. (Other countries' estimates of waste are even higher, up to 13 per cent.)

The simplest way to stop these little robber bricks is to cut power to them when they are not being used. If you use a power bar, you could use its switch to functionally "unplug" anything connected to it, but this all or none approach doesn't often work because you may want to keep some devices on. Interestingly, Belkin has announced the Conserve Surge, which is a surge protected power bar that allows you to turn off power to some outlets while leaving others powered. This product should be available by fall, with a price of around \$50.

Power bricks aren't the only sources of phantom loads. Any instant-on device like a computer or a monitor in standby is also drawing power, albeit at a lower rate than when the machine is being used. In 2007, the US Environmental Protection Agency toughened the Energy Star logo program so that electrical and electronic products would have to meet higher standards of energy efficiency in order to use the Energy Star logo on their products. The Canadian government has adopted large parts of this revised program (see www.oeenrcan.gc.ca/residential/personal/ for categories of products falling under the program). It is the standard for office equipment addresses several categories of gear, including computers and monitors; printers, fax machines and multifunction devices; scanners and so on.

A lot of the standard deals with power use during standby or sleep modes. With desktop computers, for example, to qualify for the Energy Star logo, models have to consume no more than two watts in standby mode, four watts in sleep mode and, depending on the class of the computer, between 50 watts and 95 watts in idle mode. For notebook computers, the baselines are lower: one watt or less in standby mode, 1.7 watts or less in sleep mode and 14 watts (for Class A notebooks) to 22 watts (for Class B notebooks) at idle. Another part of the standard deals

with power efficiency. For desktop computers, the internal power supply has to be 80 per cent efficient at 20 per cent, 50 per cent and 100 per cent of its rated output.

A revised Energy Star standard called the Tier 2 Energy Efficiency Metric will go into effect on January 1, 2009, which will mandate better performance as well as a broader set of performance criteria, such as the ability to maintain full network connectivity while in sleep mode.

Most of the tech industry tries to meet Energy Star and the European Union's RoHS (removal of hazardous substances) standards and also have their own green programs, which is good because a lot of the materials going into the manufacture of computer components are definitely not green. Dell vowed last year to become the greenest technology company in the world. Apple too has publicized the efforts it is taking to eliminate the amount of toxic materials it uses in the manufacture of Macs. But in fact most PC makers have given the nod to green in their manufacturing and recycling practices.

This means that for us consumers, it is getting easier to buy green. However, the choices are sometimes not as clear cut as we might hope. For example, flat panel displays have been largely hailed as an Earth-friendly choice because they contain far less lead and other hazardous materials and use far less power than CRT displays. But The Guardian (www.guardian.uk.org) recently ran a story about a chemical called nitrogen trifluoride, which is used in the manufacture of flat panel TVs. The Guardian article says that it is about 17,000 times more potent than carbon dioxide as a contributor to global warming.

Until next time,
David Tanaka

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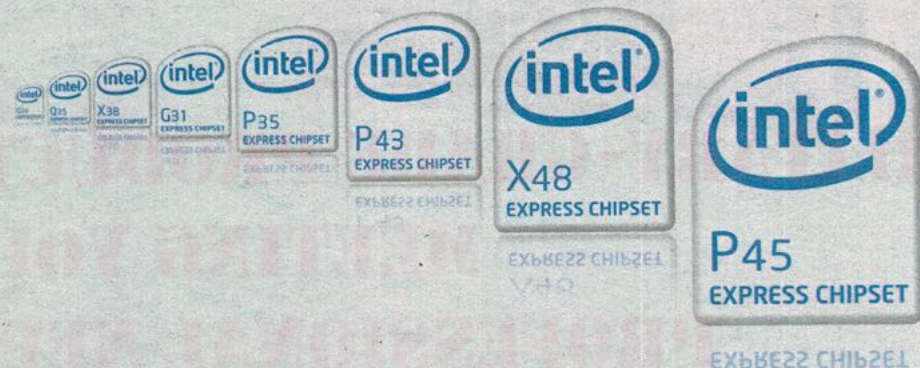
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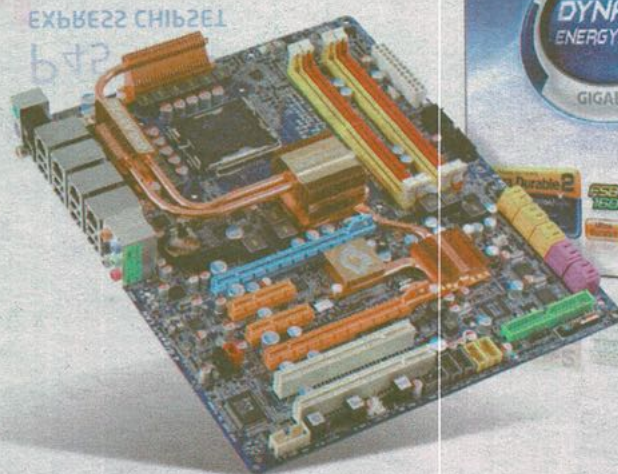
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- 2 PCI-E 2.0 x16 interface with ATI CrossFireX support
- Built-in TPM chip with 2048bits encryption to highest level digital data protection
- 2 Gigabit Ethernet LAN through Teaming function
- Blu-ray playback supported by 106dB SNR ALC889A HD audio
- Dolby Home Theater delivers outstanding audio experience

Unique Feature:



- *Product features may vary by model and region.
- *Motherboard models and price may vary based on local distribution.
- *Please refer to GIGABYTE website for CPU support information.

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